

Indiana Rail Plan

final report

prepared for

Indiana Department of Transportation

prepared by

Cambridge Systematics, Inc.

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1.0 Introduction

The demand for freight services is at an all-time high due to shifts in the economy and rapid growth in international trade. This is resulting in a freight transportation crisis impacting all modes. The railroads are operating near capacity and have begun shedding less profitable traffic. Consequently, trucks are picking up most of the unmet demand for freight rail, creating greater burdens on the highway networks that are already congested from passenger automobile traffic. Due to a number of factors, including its strategic location in close proximity to large consumer markets and an excellent multimodal transportation network, Indiana is feeling more than its share of the increased burden of increasing freight mobility demands.

What is clear is that no single mode of transportation will sufficiently serve the growing demand for the movement of goods and passengers in Indiana. What is needed is a coordinated multimodal transportation network.

With this need comes a complementary change in the role of government in rail transportation, and a growing realization that rail is but another part of a single multimodal transportation system that is a critical part of economic development and mobility. A birds-eye view of the demand and flow of goods and people across a state or region, and solutions that address issues that emerge from such a view, results in planning that better improves mobility and economic development. This shift in attitude towards understanding the rail system and maximizing its benefits for a region is not only happening at the state level, but at the Federal level as well.

The Indiana Rail Plan is being developed as part of the Indiana Multimodal Freight and Mobility Plan to direct the State of Indiana's future freight and passenger rail policy, provide a framework to guide future decisions regarding rail system investments, and ensure the efficient use of resources to support systemwide objectives. The Rail Plan supports INDOT's Long-Range Transportation Plan, and in so doing will address how rail freight and passenger mobility impacts the entire transportation system of Indiana.

The development of the Rail Plan began with establishing a profile of existing conditions, which included coordination and outreach to numerous project stakeholders, including shippers, carriers, and government agencies, to gain an understanding of their needs and issues, as related to rail transportation. This was followed by the data collection and inventory phase during which available relevant information on overall freight mobility was obtained, including goods movement data (the demand for freight services); transportation incident data (safety and security); economic, land use and demographic data (freight drivers); and existing and proposed network data (supporting freight infrastructure). Future growth rates were then applied to these existing conditions in order to forecast freight movements through the year 2035. From this existing and future

data, freight system performance was profiled, identifying and evaluating key performance measures for major freight corridors in the state.

A major component of the Rail Plan is the establishment of economic and industry profiles which assess the State of Indiana's economy as it relates to trends in goods movement and logistics, discussing the factors that drive the demand for rail transportation in Indiana. In addition, the Rail Plan identifies and discusses the policies and issues that impact rail mobility in the State, focusing on potential institutional barriers that may hinder the integration of rail and freight-specific issues into the transportation planning and programming process. Based on the information collected and assessments performed, the Rail Plan then identifies the State's rail transportation system gaps and needs, potential funding sources, a methodology for evaluating and prioritizing freight projects, and a phased implementation plan for policy, capital and operational rail improvements.

2.0 Coordination and Outreach

2.1 PURPOSE AND GOALS OF OUTREACH PROGRAM

The Coordination and Outreach component of the Indiana Rail Plan (Plan) is an essential means of including the stakeholders, from both public agencies and the private sector, in the process. Not only is this a means of keeping the stakeholders apprised of the study's findings and recommendations, but it is also a valuable tool for engaging them in the study, obtaining valuable input and gaining a better understanding of their needs and issues. In addition, by including the stakeholders in the study process, they are much more likely to take ownership in and support the study's final recommendations.

The Coordination and Outreach program for the Plan is based on a three-step approach which includes Stakeholder Interviews, Agency Outreach, and the Establishment of a Freight Advisory Committee. The goal of the Coordination and Outreach program was to build on existing organizations, including economic development groups at the state and regional level, and other agencies across the State. In addition, the State's Metropolitan Planning Organizations (MPOs) were tapped for their input into regional issues, as well as the freight carriers and shippers, who were targeted through the Stakeholder Interview process.

The initial outreach efforts began early in the study process with project kickoff meetings with two key stakeholder groups, followed by a series of interviews with shippers, carriers, and agency representatives. The kickoff meetings involved presentations at the Statewide MPO Conference and the Indiana Logistics Council Infrastructure Subcommittee Meeting. The interview process involved the identification of freight industry and agency representatives and the development of a survey guide, followed by implementation of the actual interviews. These activities are described in more detail below.

2.2 MPO CONFERENCE AND LOGISTICS COUNCIL PRESENTATIONS

Shortly after the Plan's development began, a presentation was given by the study team at the Indiana Statewide Metropolitan Planning Organization (MPO) Conference, held in Evansville, Indiana on October 10, 2007. This provided an opportunity to create awareness of the study among the State's 14 MPOs and other agencies represented at the conference. The presentation included a discussion of the goals of the study, freight trends at both the national and state levels, the study's scope, and a timeline for completion of the various components of the study. In addition, attendees were advised of the role of the MPOs in upcoming agency interviews, and were encouraged to participate in the interview process. The session was well-attended and the PowerPoint

presentation was made available for inclusion on the Conference web site. The Plan was presented again at the annual Indiana Statewide MPO Conference in South Bend on October 7, 2008.

During the project's scoping phase, it was determined that a Freight Advisory Committee would be established and supported by INDOT to oversee the study. This committee would consist of private and public sector stakeholders, including shippers, carriers, agencies, and organizations with a vested interest in moving freight efficiently to, from, and within the State of Indiana. The Indiana Logistics Council, which represents 41 organizations from the public and private sectors, was identified as the appropriate body to serve in this advisory capacity. The Council has created three subcommittees, including Industry Awareness, Workforce Development, and Infrastructure (the Infrastructure Subcommittee has specifically identified the utilization of the Indiana Multimodal Freight and Mobility Plan as one of its actions in the current year). An initial presentation on the Plan was provided to the Infrastructure Subcommittee at its quarterly meeting on October 25, 2007. This presentation followed the format of the one that was provided to the MPO Conference, which is described above.

2.3 STAKEHOLDERS INTERVIEWS

During the initial stages of the Plan's development, a stakeholder survey was conducted by the CS project team. The purpose of the survey was to provide a qualitative understanding of freight issues and trends that would complement the quantitative data collected from other sources. In addition to providing an avenue for participants to express advice and thoughts in regard to freight transportation system strengths and weaknesses, the interviews also afforded valuable insight and multiple perspectives to be taken into consideration when drafting the Plan.

A preliminary list of stakeholders was assembled through conversations with INDOT staff, revisiting prior related studies, and referencing both the Logistics Council and Indiana Logistics Directory contact lists. This list was reviewed and adjusted in an attempt to recruit a diverse mix of public and private sector participants representing a range of backgrounds. Further recommendations were gleaned through conversations during initial interviews. In all, 47 organizations were contacted, resulting in a total of 26 interviews being conducted between December 2007 and February 2008. Most interviews were conducted either in-person or by phone, with one being returned via e-mail. A listing of the agencies represented in the interviews, along with their respective sectors, is shown in Table 2.1.

Table 2.1 Stakeholder Interviewees

| Agency | Sector |
|--|----------------------|
| Delaware-Muncie MPC (DMMPC) | MPO |
| Indianapolis MPO | MPO |
| Bloomington Area/Monroe County MPO (BMCMPPO) | MPO |
| Northwest Indiana RPC (NIRPC) | MPO |
| Evansville MPO | MPO |
| Ohio-Kentucky-Indiana Regional Council of Governments (OKI) | MPO |
| Michiana Area Council of Governments (MACOG) | MPO |
| Kentuckiana Regional Planning and Development Agency (KIPDA) | MPO |
| Columbus Area MPO (CAMPO) | MPO |
| Northeastern Indiana RCC (NIRCC) | MPO |
| Madison County Council of Governments (MCCOG) | MPO |
| Purdue University (Automotive Clustering Study) | University |
| Purdue University Westville (Coal Transportation) | University |
| Purdue University (Biofuels) | University |
| University Loft Company | Shipper |
| Thomson Consumer Electronics | Shipper |
| Indiana Grain and Feed Association | Shipper |
| U.S. Food Service | Shipper |
| Vanguard Services, Inc. | Transportation |
| Indiana Motor Truck Association | Transportation |
| Ports of Indiana | Transportation |
| Indianapolis International Airport | Transportation |
| Baylor Trucking/Baylor Intermodal | Transportation |
| Duke Realty | Developer |
| Indiana Economic Development Corporation (IEDC) | Economic Development |
| Northwest Indiana Forum | Economic Development |

2.4 SUMMARY OF INTERVIEW RESULTS

Indiana is often referred to as the “Crossroads of America,” and input from the stakeholder group largely supported this claim. Throughout the interview process, several key themes resonated regarding pressures and demand on the statewide multimodal transportation infrastructure as a result of trends both within the State and nationwide.

This section begins with a comprehensive summary of discussions with the participating MPOs. What follows are highlights of key pieces of knowledge gathered from the various other interviewees, beginning with a summary of general freight comments, then followed by more specific comments broken out by mode.

MPO Interview Summary

A significant group of stakeholders interviewed through the study’s Outreach Program included representatives of 11 of Indiana’s 14 MPOs. It was apparent during most of the interviews that while freight is an emerging area of interest, freight planning had not historically been a component of their long-range plans in the past. While six of the 11 MPOs interviewed do have freight components in their current LRTPs, most of these involve discussions of freight issues, with only a few actually identifying freight-related projects. Accordingly, three of the MPOs do employ specific evaluation criteria or performance measures to prioritize freight projects for inclusion in their LRTP and TIP. At the present time, none of the MPOs have dedicated, full-time “freight” personnel, however, many of them have identified certain staff who allocate a portion of their time to addressing freight-related issues. Of the 11 MPOs interviewed, three have a designated Freight Working Group or Steering Committee, with one additional MPO’s Intermodal Advisory Task Force recently becoming inactive.

Most of the MPOs are beginning to realize the need for Freight Planning and the linkages between freight mobility and economic development. It appears that this realization will result in more emphasis in the future on freight planning at the regional level. For example, the MPO Council, the Statewide Peer Group of Indiana’s MPOs, is in the process of developing a Freight Subcommittee, which will likely begin meeting in 2009. Many of the MPOs that were interviewed expressed interest in participating in this subcommittee.

Over half of the MPOs interviewed had recently completed, or have underway, freight-specific studies, plans or projects as summarized in the bullet points below:

- The most active of the MPOs in the freight-planning arena, the Michiana Area Council of Governments (MACOG), conducted a Freight Inventory and Study in 2004 which identified needs for infrastructure improvements to improve freight mobility within the region. The identified projects were subsequently designated in the LRTP’s project listings. More recently, in 2007,

MACOG completed a Truck Route Inventory Report for Elkhart, Kosciusko, Marshall, and St. Joseph Counties. In addition, MACOG's Comprehensive Economic Development Strategy (CEDS), updated in 2006, provides a regional view of freight-producing industries in the region.

- The Indianapolis MPO's Freight Plan was completed in 1998.
- MCCOG's Intermodal Study was completed in 2000. In addition, a railroad grade separation study is currently underway.
- OKI has included a Freight Study in their UPWP for 2008.
- The Evansville MPO performed a survey in 2005 to identify freight concerns in each of its five counties. In addition, the Southwest Indiana Intermodal Terminal Feasibility Study was completed in 2006.
- KIPDA has included a study in their UPWP to consider freight flows within their travel demand model. In addition, KIPDA is currently developing a survey to identify potential freight bottlenecks within the region.
- In Northwest Indiana, the Four Cities Consortium grew out of the Conrail acquisition (by NS and CSX) to address the issue of at-grade crossings. (The Consortium included the cities of Whiting, Hammond, East Chicago, and Gary.) The Consortium received CMAQ funding through NIRPC, however it is yet to be implemented. The Four Cities Consortium was linked to the CREATE program in Illinois.
- Since the interviews were completed, an EIS was completed underway by the Surface Transportation Board (STB) to evaluate the impacts of the CN's proposed acquisition of the Elgin, Joliet, & Eastern Railway Company (EJ&E) Regional Railroad in Northwestern Indiana and Northeastern Illinois. Following completion of the EIS, the STB did approve this acquisition.

Summary of General Stakeholder Input

Based on stakeholder conversations and outside research, there are many factors that suggest that Indiana is primed for growth in industries that have been established strongholds in the State, particularly manufacturing. The optimal site locations for industrial growth are hinged upon having access to an efficient transportation system as well as to a capable labor pool. For this reason, it appears that Indianapolis and other population bases with multimodal access are ideal candidates to embrace business growth. The following stakeholder points support this claim:

- Overall the State has an effective base of transportation infrastructure from which to build across all modes.
- A vast majority of freight traffic through the State is pass-through traffic, en route to or from destinations outside of Indiana. It is in the best interest of most Indiana businesses to begin to capture a portion of this traffic.

- Connectivity to a large consumer population base in Indiana and neighboring states is one of the primary attributes of business siting in Indiana.
- The Indianapolis area is in a favorable position for aggressive economic development for the following reasons:
 - Ample room for air cargo expansion on the entire north side of Indianapolis International Airport;
 - Excellent highway connectivity in all directions with the exception of the Southwest, where the I-69 linkage between Indianapolis and Evansville is currently under development;
 - Class I rail connectivity to East coast and West coast seaports; and
 - Relatively low-priced land available for industrial/logistics-oriented uses.
- Availability of qualified, skilled workers for general labor, manufacturing, and warehouse jobs is an emerging concern.
- Key industry growth is occurring in numerous sectors: automotive and transportation equipment (Honda, Toyota, and Subaru); telecommunications, logistics and distribution; and life sciences.
- Traditional agricultural trends related to the production of grain are being complemented by emerging ethanol and biofuel industry growth.

Railroad-Related Stakeholder Input

Based on stakeholder conversations and outside research, there are many factors that suggest that Indiana is primed for growth in industries that have been established strongholds in the State, particularly manufacturing. The optimal site locations for industrial growth are hinged upon having access to an efficient transportation system as well as to a capable labor pool. For this reason, it appears that Indianapolis and other population bases with multimodal access are ideal candidates to embrace business growth.

In particular, Indiana is enmeshed by an intricate network of short-line, regional, and Class I railroads, and accordingly, rail is second only to trucking (measured by weight) as a mode of freight transportation in the State. The rail industry has been pinpointed as a sector with significant growth potential, both because of the existing infrastructure and right-of-way in place, as well as its ability to develop intermodal facilities. All indications are that container traffic is an appealing option to both the shipping and manufacturing industries, and the issue of intermodal development has been on the radar screen of public officials and private industry representatives throughout the State for several years. The majority of rail-related comments derived from stakeholder interviews revealed specific areas for improvement and investment in the State's rail infrastructure. Key points are summarized in the bullet points below:

- Demand for freight rail service is increasing nationwide, and rail companies are making targeted capital investments at a faster rate than in the past to relieve key bottlenecks throughout their national systems.
- There are several logical locations for intermodal facilities in Indiana, however funding arrangements remain a key concern.
- Rail connectivity with the East Coast is provided by NS and CSX; there is a demand for West Coast originating traffic destined for Indiana that can bypass Chicago.
- The potential of establishing new trailer on flat car (TOFC) service from Louisville to New Jersey presents an intriguing option for the trucking industry to efficiently deliver auto industry products to the East Coast.
- Specific areas for efficiency improvements include connectivity among and between operators through enhanced technology; consolidations among short-lines and continued abandonments (or fire sales) by Class I's of marginally operating infrastructure, shifting operations to local operators; and increased intermodalism to ensure economic development benefits remain in-state.
- With the nearest rail yard with West Coast connectivity in Joliet, Illinois there is demand from area businesses for a rail yard in the Indianapolis area to process freight to and from West Coast ports.
- Indiana's mining industry is reliant on rail's ability to transport high-volume, lower-value bulk commodities. Coal-specific comments are summarized below:
 - In many cases the Class I's are not interested in increased coal movement. Coal is less profitable than other commodities and the Class I's are near capacity on many lines.
 - Connectivity is lacking between southwestern Indiana, where the coal-fields are located, and the Class I Railroad mainlines and major ports of northern Indiana.
 - Reliability issues in rail delivery of coal are forcing power plants to maintain higher coal inventories. Capacity and bottleneck issues are also an issue if Indiana intends to export coal to a wide geographic area.
 - Although there is significant Class I mileage in Indiana, the railroads are focusing investments elsewhere. Indiana is part of a nationwide network, primarily serving pass-through traffic.
 - Increases in demand for rail movement of other commodities (containers, ethanol, grains) may further inhibit growth in the coal sector. However, it is also an opportunity for partnership with other industries (and the Ports of Indiana) as these other sectors are in need of infrastructure improvements as well.

- The Department of Natural Resources issues new coal extraction permits regularly, including at least one entirely new coal mine site in Gibson County, suggesting that Indiana has the potential to increase coal production to meet greater demand, if that demand can be satisfied by necessary transportation services.
- Numerous short-lines are moving coal between mines and plants. As far as exporting via rail, the challenge is connecting the coalfields to the Class I mainlines. Also, Class I railroads are not interested in moving coal short distances.

3.0 Indiana's Passenger Rail System

3.1 CURRENT PASSENGER RAIL SYSTEMS

This technical memorandum provides a profile of existing and proposed passenger rail service in Indiana. A focus of this inventory is to explore relationships between passenger and freight rail operations to support the Indiana Rail Plan.

Rail passenger service in Indiana is provided by Amtrak and the Northern Indiana Commuter Transportation District (NICTD). Amtrak provides intercity passenger rail and connecting bus service as part of its national network. NICTD operates commuter trains between South Bend and downtown Chicago, with stops in Michigan City, Gary, East Chicago, and other communities.

Amtrak

Current Policy

Amtrak was created in 1971 and is now the only significant intercity passenger rail service in the United States. Amtrak operates over approximately 22,000 route miles, 730 of which are owned by the railroad. The remainder of Amtrak's network is owned by freight railroads.

President Bush's recent 2009 budget proposal calls for Amtrak's budget to be cut by \$525 million dollars, representing a 40 percent reduction. The President's three previous budget proposals also sought major funding cuts for the passenger rail service. However, these requests have historically been denied by Congress as legislators strive to maintain service to their districts. Representative James Oberstar of Minnesota, who chairs the transportation committee, plans to introduce a bill that would increase Amtrak's funding over requested levels.

A recent trend with Amtrak has been state subsidies of important intrastate lines. The surrounding states of Michigan and Illinois provide examples. The Blue Water, Wolverine, and Pere Marquette routes (described below) are partially funded by the Michigan Department of Transportation. These services have been seeing ridership gains in response to higher fuel prices and job growth in the Chicago area. Year-to-date ridership on the Pere Marquette route is up 11.7 percent. In 2006, the Illinois legislature doubled its subsidy of in-state Amtrak routes. The additional funding (to \$24.3 million per year) allowed Amtrak to double service frequency on lines between Chicago and St. Louis (to five trains per day), Quincy (to two trains per day), and Carbondale (to two

trains per day). Key stations along the enhanced routes have seen ridership increases of up to 50 percent in one fiscal year.¹

The Capitol Corridor in Northern California is another example. This corridor is a 170-mile route from San Jose to Auburn, with stops in San Francisco, Oakland, and Sacramento, among other places. The Capitol Corridor Joint Powers Authority (CCJPA) is a partnership among the local transit providers in this eight-county service area. Through the CCJPA, these agencies share in the management and administration of the corridor. The Capitol Corridor uses funds provided by the State of California to pay Amtrak to provide train service, including all staffing and maintenance of rolling stock. The San Francisco Bay Area Rapid Transit District (BART) provides management support to the CCJPA.

The State of Ohio is currently studying the potential for state-supported Amtrak service in the Cleveland-Columbus-Dayton-Cincinnati ("3-C") Corridor. Ohio Governor Ted Strickland has asked Amtrak to identify what would be needed to begin passenger service in this corridor. This would tie into the Ohio Hub Plan (described below in Section 3.2), which concluded that the 3-C Corridor can generate significant ridership and development around train stations. Amtrak plans to consult with the freight railroads to determine what capital improvements would be needed to enable passenger service while also improving freight efficiency.²

Indiana Routes

Amtrak operates seven intercity rail routes that go through Indiana. They are listed below in Table 3.1. The table also lists each route's origin and destination cities, stops in Indiana, and service frequency in trains per week in each direction. Figure 3.1 is a map showing the Amtrak routes in and around Indiana. Until July 2003, Amtrak also operated the Kentucky Cardinal service as an extension of the Hoosier State line between Louisville and Chicago via Indianapolis. The service, which took more than 10 hours to traverse Indiana in part due to poor track quality between Jeffersonville and Indianapolis, did not meet ridership expectations and was discontinued after four years.

¹ Amtrak. State Factsheets, Fiscal Years 2003-2007, available at <http://www.amtrak.com/pdf/factsheets>.

² National Railroad Passenger Corporation. "Gov. Strickland Asks Amtrak to Review 3-C Corridor for Possible Passenger Service." News release available at http://www.amtrak.com/servlet/ContentServer?pagename=Amtrak/am2Copy/News_Release_Page&c=am2Copy&cid=1178294117949&ssid=180.

Table 3.1 Amtrak Routes in Indiana

| Route | Service Between | Indiana Stops | Service Frequency (Trains per Week) |
|--------------------|--|---|-------------------------------------|
| Blue Water | Chicago Union Station – Port Huron, Michigan | Hammond, Michigan City | 7 |
| Capitol Limited | Chicago Union Station – Washington Union Station | Hammond South Bend, Elkhart, Waterloo, | 7 |
| Cardinal | Chicago Union Station – New York Penn Station | Dyer, Rensselaer, Lafayette, Crawfordsville, Indianapolis, Connersville | 3 |
| Hoosier State | Chicago Union Station – Indianapolis | Dyer, Rensselaer, Lafayette, Crawfordsville, Indianapolis | 4 |
| Lake Shore Limited | Chicago Union Station – New York Penn Station | South Bend, Elkhart, Waterloo | 7 |
| Pere Marquette | Chicago Union Station – Grand Rapids, Michigan | Hammond, Michigan City | 7 |
| Wolverine | Chicago Union Station – Pontiac, Michigan | Hammond, Michigan City | 21 |

Source: Amtrak Route Atlas, 2008.

Figure 3.1 Amtrak Route Map for Indiana



Source: Amtrak Route Atlas, 2008.

There are also a number of Thruway motorcoach connections that provide inter-city bus service between Amtrak stations in Indiana (and elsewhere) and locations that Amtrak does not serve by rail. These are typically either operated by Amtrak or contracted out to private motorcoach carriers. Greyhound Lines operates a daily service (each way) between Louisville, Kentucky and Chicago, with a stop at the Amtrak station in Indianapolis. Greyhound also provides service between Cincinnati and Chicago, again with a stop in Indianapolis. Finally, Burlington Trailways operates daily buses (in each direction) between Davenport, Iowa and Indianapolis, with an additional stop in Crawfordsville.

Table 3.2 shows ridership by station at Indiana Amtrak stations for fiscal years 2003 through 2007. As the table shows, total Indiana ridership for all stations has remained relatively stable at more than 100,000 passengers (boardings plus alightings) in each of the last four years.

Table 3.2 Amtrak Ridership¹ by Station
FY 2003 to 2007

| Station | 2003 | 2004 | 2005 | 2006 | 2007 |
|--|---------------|----------------|----------------|----------------|----------------|
| Connersville | 472 | 495 | 447 | 692 | 497 |
| Crawfordsville | 1,950 | 2,718 | 3,188 | 3,676 | 4,431 |
| Dyer | 838 | 1,042 | 1,109 | 1,310 | 1,723 |
| Elkhart | 6,062 | 7,378 | 11,265 | 12,489 | 11,718 |
| Hammond-Whiting | 10,890 | 11,687 | 9,793 | 6,356 | 6,457 |
| Indianapolis | 15,816 | 23,612 | 23,989 | 31,446 | 29,110 |
| Jeffersonville ² | 578 | – | – | – | – |
| Lafayette | 7,772 | 11,141 | 12,672 | 14,242 | 18,483 |
| Michigan City | 1,606 | 2,085 | 2,663 | 2,100 | 1,941 |
| Nappanee ³ | 3,638 | 3,397 | 1,302 | 0 | 0 |
| Rensselaer | 776 | 1,074 | 1,170 | 1,169 | 1,630 |
| South Bend | 15,603 | 18,700 | 19,286 | 17,725 | 15,856 |
| Waterloo | 15,551 | 19,425 | 19,504 | 17,330 | 16,217 |
| Total Indiana Ridership¹ | 81,552 | 102,754 | 106,388 | 108,535 | 108,066 |

Source: Amtrak State Fact Sheets, 2003 to 2007.

Notes:

¹ Ridership defined as sum of boardings and alightings at each station.

² Service ended in July 2003.

³ Service ended in March 2005.

Amtrak Facilities

Amtrak has a large maintenance facility in Beech Grove, located southeast of Indianapolis. Employees at the facility repair and overhaul cars and locomotives for service across the Amtrak system. During fiscal year 2007, 166 overhauls of cars and locomotives were completed at Beech Grove, along with 25 wreck repairs.³

Economic Impacts

In fiscal year 2007, Amtrak employed 780 Indiana residents, 550 of whom work at the Beech Grove maintenance facility.⁴ Total wages paid to these employees amounted to \$37.8 million. In addition, Amtrak spent approximately \$9.9 million procuring goods and services in Indiana, of which \$6.9 million was expended in Indianapolis.

INDOT recently provided approximately \$1 million to help fund capital improvements at the Beech Grove facility. Amtrak used the funds to renovate buildings at the facility, thereby expanding repair services and helping to secure jobs for area residents.

Travel Times

Table 3.3 compares travel times between Amtrak, Greyhound bus, and private automobile for the corridors that Amtrak serves. Amtrak generally takes longer than Greyhound to make these trips, which in turn is slower than traveling by car. Two exceptions are the Pere Marquette and Wolverine routes on which Amtrak is quite competitive with bus service, beating Greyhound by more than two hours on the latter. Greyhound does not serve Port Huron, so no comparison can be made between Amtrak and bus service on the Blue Water line.

³ Amtrak. *Amtrak Fact Sheet, Fiscal Year 2007, State of Indiana*, available at <http://www.amtrak.com/pdf/factsheets/INDIANA07.pdf>.

⁴ Ibid.

Table 3.3 Comparison of Travel Times by Amtrak, Intercity Bus, and Private Automobile

| Route | Origin | Destination | Travel Time (Hours:Minutes) | | |
|--------------------|-----------------------|----------------------------|-----------------------------|-----------|------------|
| | | | Amtrak | Greyhound | Automobile |
| Blue Water | Chicago Union Station | Port Huron, Michigan | 6:56 | N/A | 5:17 |
| Capitol Limited | Chicago Union Station | Washington Union Station | 18:00 | 17:00 | 11:26 |
| Cardinal | Chicago Union Station | New York Penn Station | 26:30 | 17:10 | 12:38 |
| Hoosier State | Chicago Union Station | Indianapolis Union Station | 5:00 | 3:25 | 3:04 |
| Lake Shore Limited | Chicago Union Station | New York Penn Station | 19:30 | 17:10 | 12:38 |
| Pere Marquette | Chicago Union Station | Grand Rapids, Michigan | 3:57 | 4:10 | 2:54 |
| Wolverine | Chicago Union Station | Pontiac, Michigan | 6:21 | 8:25 | 4:40 |

Sources: Amtrak, Greyhound Lines, Google Maps.

Northeast Indiana Commuter Transportation District

The origin of the Northeast Indiana Commuter Transportation District (NICTD) lies in the early part of the twentieth century, when a network of electric intercity railroads was built across the East and Midwest. Built before automobiles were widely adopted, these railroads provided passenger service between cities in the region. One of these lines was a streetcar that ran between East Chicago and Indiana Harbor, called the Chicago and Indiana Air Line Railway. It was later renamed the Chicago, Lake Shore, and South Bend Railway, reflecting an aggressive plan for expansion.⁵ Eventually, the railroad expanded to provide service between downtown Chicago and Pullman, Illinois. The railroad went through several iterations as various owners purchased it and subsequently went bankrupt.

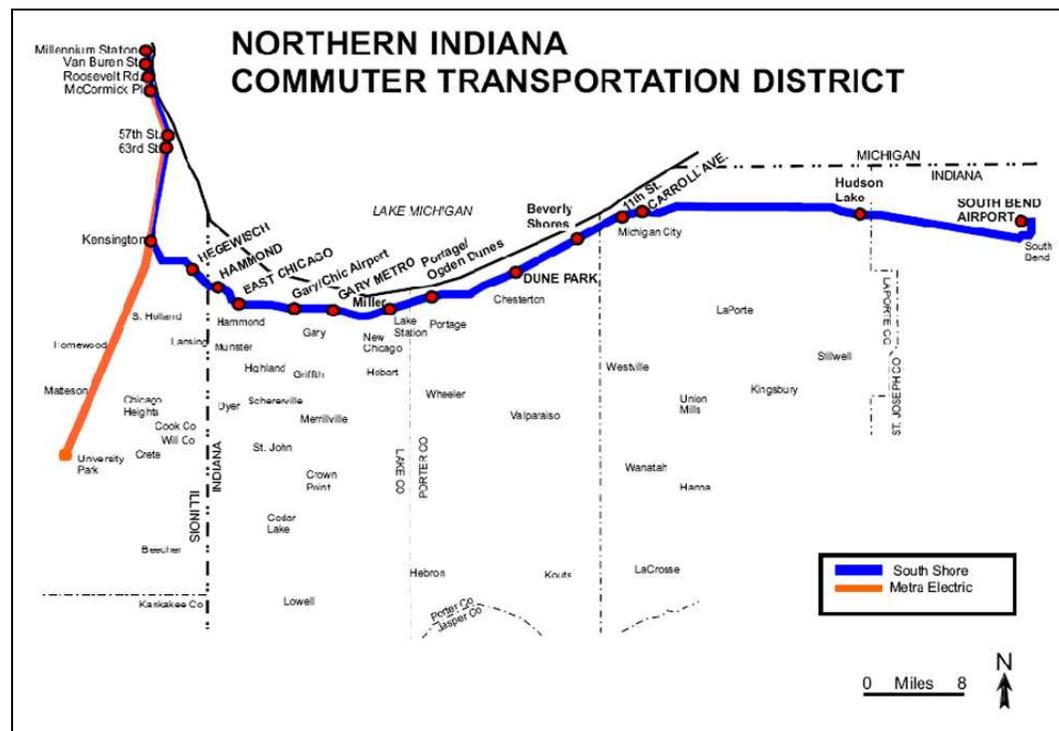
The line saw its greatest ridership during World War II (six million passengers per year), but it suffered during the post war years from declining ridership due to low-density suburban development (which does not support rail transit as effectively) and the increasing availability of automobiles. In 1976, the South Shore (as it was known at the time) asked the Interstate Commerce Commission (ICC) for permission to discontinue passenger service altogether in order to focus on freight, which was more profitable. The ICC delayed approval of the request to give the State of Indiana time to develop an alternative solution for passenger rail service in the corridor. In 1977, the Indiana General Assembly created NICTD with a specific mandate to preserve commuter rail service between South Bend and Chicago.

⁵ Northern Indiana Commuter Rail District. *History of the South Shore Rail Passenger Service*, available at <http://www.nictd.com/links/ourhistory.htm>.

The railroad remained under private ownership but NICTD was responsible for funding passenger service. However, in 1989 the private railroad went bankrupt and NICTD purchased its passenger assets and began providing passenger service directly later that year. Eventually, the agency also bought the track and right-of-way necessary to provide passenger service. Annual ridership increased from 1.5 million passengers in 1978 to 3.5 million in 1999. The Chicago South Shore and South Bend Railroad still provides freight service just as it did before the bankruptcy, operating along shared trackage with the NICTD.

Currently, NICTD operates 20 westbound and 21 eastbound trains each weekday between South Bend and Millennium Station in Chicago, and 10 westbound and 11 eastbound trains on Saturdays, Sundays, and holidays. Figure 3.2 is a route map of the system showing the South Shore Line and its stops.

Figure 3.2 NICTD Route Map



Source: NICTD. Available at <http://www.nictd.com/service/SystemMap.pdf>.

Most of the passengers who ride the South Shore Line are commuting to jobs in Chicago. As a result, NICTD has significant economic impacts on Indiana. One study performed by NICTD in 2004 found that the average annual salary from a commuter's Chicago job was \$54,400, and almost 20 percent of riders earn over

\$75,000 per year.⁶ It is estimated that these wages return a total of \$265.5 million per year to the NICTD service territory (which includes the Hegewisch Station in Illinois) and \$237.7 million per year to the State of Indiana.

Table 3.4 presents weekday travel times between Chicago and South Bend for both eastbound and westbound trains. As the table shows, the average travel time each way is two hours and 25 minutes. Average travel time between Chicago and East Chicago (the highest ridership stop) is about 40 minutes. Average travel time between Chicago and Gary Metro is about one hour.

Table 3.4 NICTD Weekday Travel Times

| Train Number | Departs | Arrives | Travel Time |
|------------------|---------------------|---------------------|-------------|
| Westbound | (South Bend) | (Chicago) | |
| 12 | 5:35 | 8:05 | 2:30 |
| 14 | 7:55 | 10:25 | 2:30 |
| 18 | 12:02 | 14:22 | 2:20 |
| 20 | 15:53 | 18:22 | 2:29 |
| 22 | 19:48 | 22:08 | 2:20 |
| Average | – | – | 2:25 |
| Eastbound | (Chicago) | (South Bend) | |
| 7 | 8:45 | 11:05 | 2:20 |
| 9 | 12:35 | 15:00 | 2:25 |
| 11 | 15:58 | 18:28 | 2:30 |
| 15 | 17:10 | 19:37 | 2:27 |
| 19 | 19:15 | 21:38 | 2:23 |
| Average | – | – | 2:25 |

Source: NICTD Timetables, August 2007.

Note: All times are Central Time.

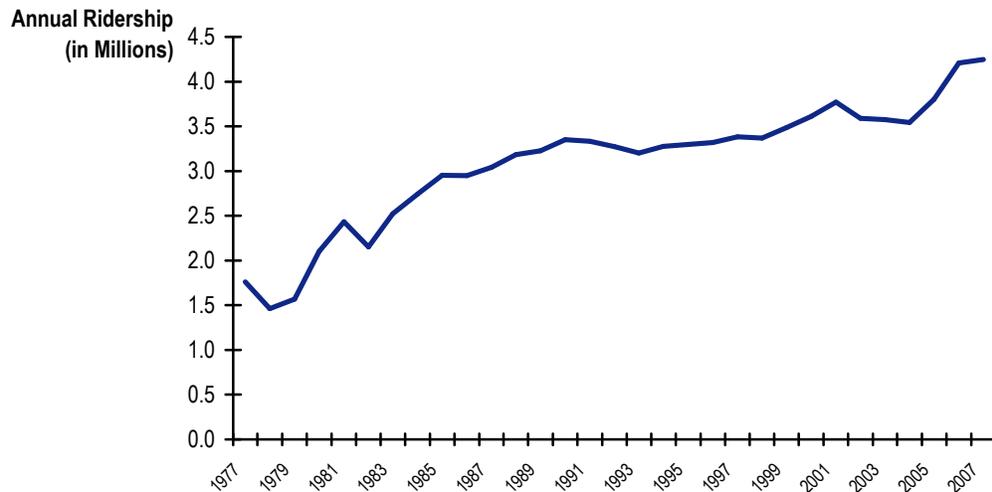
As mentioned previously, ridership on the South Shore Line more than doubled between 1978 and 1999, and now accounts for about 12 percent of total statewide transit trips.⁷ Ridership has continued to grow since then, surpassing 4.2 million annual passengers in 2007 (Figure 3.3). These ridership gains are primarily driven by economic and job growth (especially in the Chicago metropolitan

⁶ Northern Indiana Commuter Transportation District. *NICTD 2004 Commuter Survey Analysis Report*. 2004.

⁷ Indiana Department of Transportation. *Indiana Public Transportation Annual Report, 2006*. August 2007.

area), the rising price of gasoline, and the continuing influx of Illinois residents into northwestern Indiana as the Chicago metropolitan area expands. With trains consistently running at or near capacity, NICTD has addressed capacity shortfalls by scheduling additional trains and purchasing 14 new double-decker passenger cars.⁸

Figure 3.3 South Shore Line Annual Ridership
1977-2007

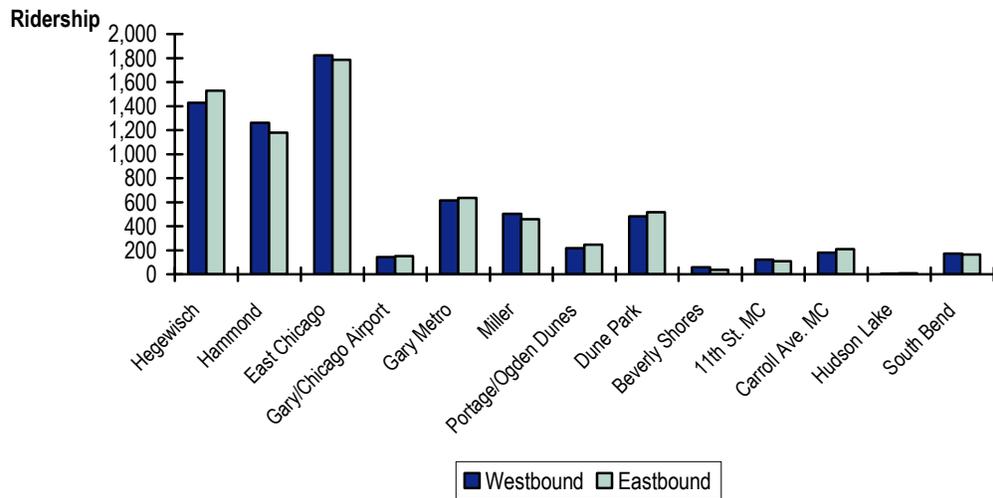


Source: NICTD.

Figure 3.4 presents 2006 average weekday ridership by station on the South Shore Line for both eastbound and westbound trips. These numbers include both boardings and alightings; hence, the westbound numbers are predominantly boardings, while the eastbound figures are mostly alightings. East Chicago, Hegewisch, and Hammond are by far the busiest stops; together, these three stations comprise more than 64 percent of South Shore Line ridership. The Gary Metro, Dune Park, and Miller stations also have significant ridership.

⁸ Poparad, P. *No fare hike planned for South Shore in 2008.* Chesterton Tribune. December 3, 2007.

Figure 3.4 South Shore Line Average Weekday Ridership by Station 2006



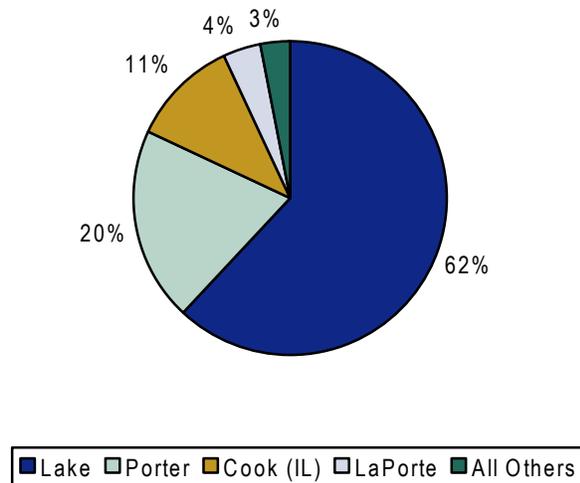
Source: NICTD.

Figure 3.5 shows the originating counties for South Shore Line riders in 2004, based on a survey conducted by NICTD. More than 80 percent of riders came from either Lake or Porter Counties, with Lake County making up a particularly large share of the total. A further 11 percent originated in Cook County, Illinois, while La Porte County contributed 4 percent. All other counties combined made up the remaining 3 percent. This further illustrates that the vast majority of South Shore Line riders are commuting from their homes in northwestern Indiana.

The vast majority (88 percent) of NICTD riders drive their own vehicles to a South Shore Line station to get on the train. Nine percent arrive by car as passengers, while relatively small proportions access stations by walking or bus. Stations that are located in downtown areas and/or are served by bus tend to have more commuters arriving by foot or by bus. Most South Shore Line passengers board in the western portion of the NICTD service territory. In 2004, 79 percent of riders boarded at the Miller station in eastern Gary or points west.⁹

⁹ Northern Indiana Commuter Transportation District. *NICTD 2004 Commuter Survey Analysis Report*. 2004.

**Figure 3.5 Source Counties for South Shore Line Riders
2004**



Source: NICTD

Stations along the South Shore Line have various amenities such as vehicle parking, ATMs, pay phones, agent services, and refreshment services. Given the high proportion of commuters who arrive at the station by car, parking facilities are by far the most heavily utilized amenity. In 2006, the overall utilization rate for vehicle parking at all South Shore Line stations was 90.8 percent. Other station amenities tend to be less utilized, but the figures vary by station. For example, commuter usage of refreshment facilities varies from 5 percent at Carroll Avenue (where there are just vending machines) to 35 percent at Hegewisch (where there is a restaurant). As part of the Marquette Plan Phase 2, communities in north-west Indiana are exploring opportunities to serve tourist-related trips to lake-shore attractions with added amenities at and around several NICTD stations.¹⁰

At the Chicago end of their trip, most commuters (58.1 percent) alight at the Millennium Park (formerly Randolph Street) station. Another 38.8 percent get off at the Van Buren Street station. The remainder alight at either Roosevelt Road (1.2 percent) or 57th Street/Hyde Park (1.9 percent). Most South Shore Line riders reach their final destination by foot after getting off the train.

3.2 INDIANA PASSENGER RAIL POLICIES

NICTD service is funded in part by the Commuter Rail Service Fund, a special fund that receives 0.14 percent of the State's general sales and use tax revenue.

¹⁰Northwest Indiana Regional Planning Commission. *Porter County Transportation Corridor Plan*. 2008.

As the only entity in the State eligible for this funding, NICTD received \$11.1 million in 2006. NICTD also received \$0.1 million from the Electric Rail Service Fund, a special fund that receives property tax on railroad companies' distributable property. Together these state funding sources contributed 22 percent of NICTD's operating revenue and a share of its capital funding in 2006.¹¹

There is growing interest in passenger rail transportation in Indiana. Two bills have been introduced in the 2008 session of the Indiana General Assembly related to funding for public transportation investments. House Bill 1220 proposes to require the commission on state tax and financing policy to study state and local funding alternatives for the NICTD West Lake extension project. One option under consideration involves designating a portion of the sales tax collected in Lake and Porter counties in northwest Indiana to fund the project.¹² Northwest Indiana is also exploring options for funding coordinated regional transit services under the recently established Regional Bus Authority (RBA). House Bill 1607 proposes a referendum in 2010 in Lake, Porter, LaPorte, and St. Joseph counties for the creation of a regional transportation district.¹³ If voters in at least two counties approve, the district would be created in those counties in January 1, 2011.

House Bill 1245 proposes to divert a portion of the county option income tax revenue in Indianapolis/Marion County to assist in the development of the Central Indiana Regional Transportation Authority (CIRTA). CIRTA was established in 2005 to implement rapid transit in the nine-county region surrounding Indianapolis. The bill also proposes allowing CIRTA to establish a transit development district to improve transportation infrastructure by capturing a part of the sales taxes collected in the district.¹⁴ House Bill 1660 further allows the creation of Regional Transportation Districts statewide to "plan, design, acquire, construct, enlarge, improve, renovate, maintain, equip, finance, operate, and support public transportation systems."¹⁵

¹¹Indiana Department of Transportation. *Indiana Public Transportation Annual Report, 2006*. August 2007.

¹²House Bill 1220 *Regional Development*, available at <http://www.in.gov>.

¹³House Bill 1607 *Northwest Indiana Regional Transportation District*, available at <http://www.in.gov>.

¹⁴House Bill 1245 *Mass Transit Funding*, available at <http://www.in.gov>.

¹⁵House Bill 1660 *Regional Transportation Districts*, available at <http://www.in.gov>.

3.3 PROPOSED PASSENGER RAIL INITIATIVES

There are several proposed passenger rail initiatives that could impact freight rail operations in Indiana. These include the Midwest Regional Rail Initiative intercity rail project, the Ohio HUB intercity rail project, the NICTD West Lake Corridor commuter rail projects, the DiRecTionS rapid transit system in and around Indianapolis, and the Muncie-Indianapolis-Bloomington passenger rail project. In addition, proposed transit projects in Cincinnati and Louisville, including a potential commuter rail line to Lawrenceburg and an advanced transit corridor to Jeffersonville, respectively, could have impacts in Indiana. None of these projects have been adopted in their respective region's long-range transportation plans.

One potential impact on freight rail that is common to several of these projects is the expansion of Indianapolis Union Station as a major multimodal passenger facility. If any of these intercity, commuter, or rapid transit rail projects require considerably increased passenger traffic into and out of downtown Indianapolis, temporal separation or diversion of freight traffic through Union Station may be necessary. The Indianapolis rail network offers an opportunity to relocate at least some freight traffic to the former Indianapolis Union Railway & Belt Railroad (now CSX) around downtown Indianapolis. However, any significant increase of traffic on this route would likely require infrastructure upgrades.

Midwest Regional Rail Initiative

The Midwest Regional Rail Initiative (MWRI) is an ongoing effort to improve rail service in the Midwest, sponsored by transportation agencies from the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin. Additional sponsors and stakeholders include Greyhound Lines, Inc., the Federal Railroad Administration (FRA), and Amtrak.

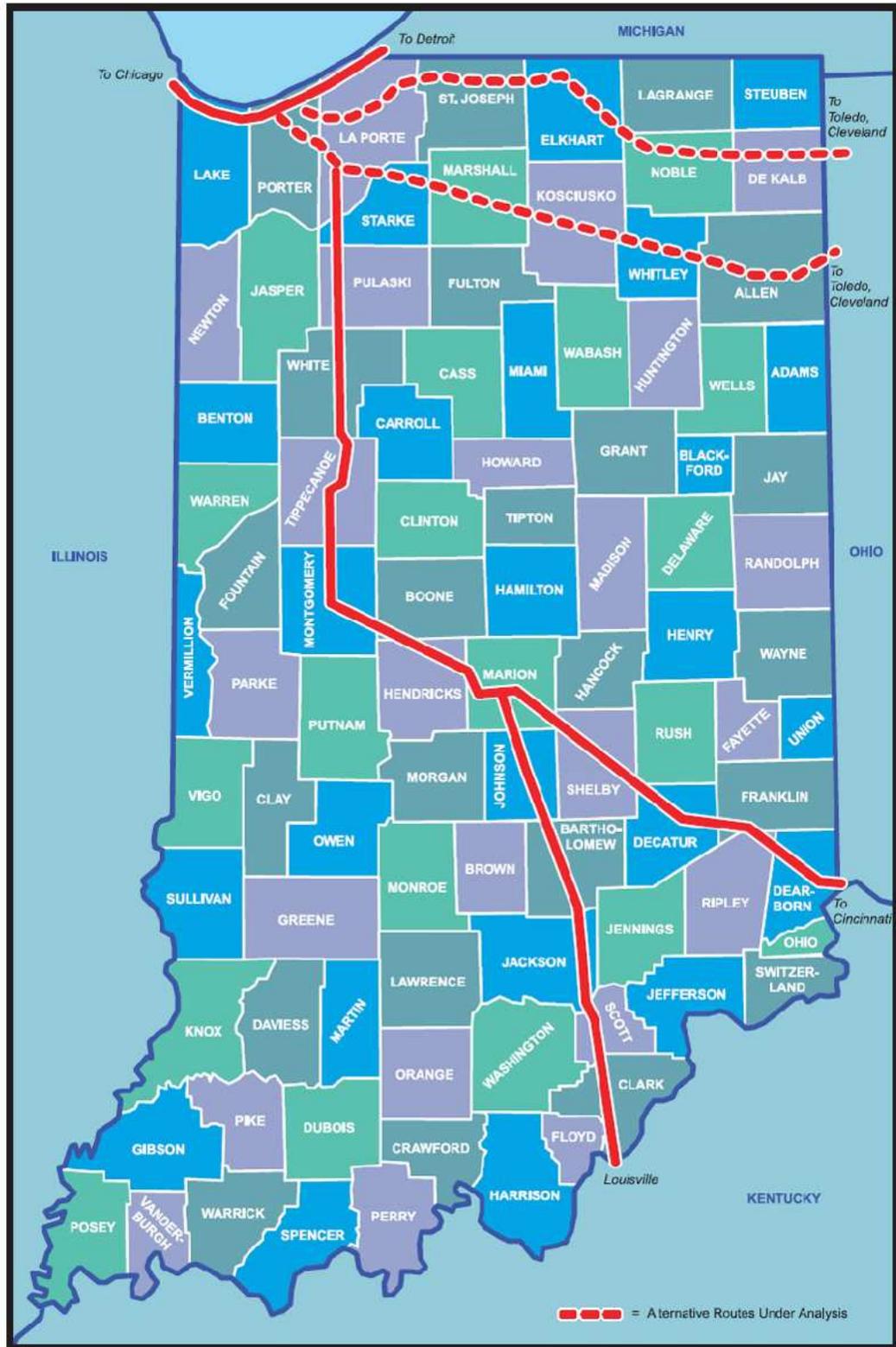
The proposed Midwest Regional Rail System (MWRRS) is the result of the vision of these agencies and stakeholders. The plan for this system includes improved level of service for passenger rail through:

- A 3,000-mile system, using existing rail rights-of-way shared with freight and commuter rail (Figure 3.6);
- Safe, comfortable and reliable service to over 100 Midwestern cities, linking the region's major economic centers;
- Access to approximately 80 percent of the region's 65 million residents;
- State-of-the-art train equipment capable of operating at speeds of up to 110 mph;
- More and better amenities, including first class seating for all, power outlets at each seat, wireless network access and food service;
- Modern stations and intermodal facilities;
- Dedicated feeder bus service connecting communities without direct rail service to the system.

In addition to providing shorter travel times, reducing congestion on all modes of travel, and improving the environment, the MWRRS is designed to provide economic benefits and new jobs by reinvigorating the region's manufacturing, service, and tourism industries. Freight rail operations also will benefit from reduced congestion and enhanced safety as a result of MWRRS track and signal improvements in shared corridors. The MWRRS Executive Report estimated a benefit/cost ratio of 1.8 for the project, one of the highest returns for any regional rail system in the United States.¹⁶

¹⁶Wisconsin Department of Transportation, et al. *Midwest Regional Rail System Executive Report*. September 2004, available at <http://www.dot.wisconsin.gov/projects/state/docs/railmidwest.pdf>.

Figure 3.7 MWRRS Routes in Indiana



Source: Indiana Department of Transportation.

Table 3.5 Required Capital Investment in Corridors Passing Through Indiana
Millions of 2002 Dollars

| Corridor | Infrastructure | Train Equipment | Total |
|---|----------------|-----------------|---------|
| Chicago-Detroit/Grand Rapids/Port Huron | \$873 | \$234 | \$1,106 |
| Chicago-Cleveland | \$1,187 | \$152 | 1,338 |
| Chicago-Cincinnati | \$606 | \$101 | \$707 |

Source: Midwest Regional Rail System Executive Report.

The MWRRS report estimates that the MWRRS will generate more than 57,000 new permanent jobs, \$1.1 billion in extra household income, and nearly \$5 billion in increased joint development potential (2002 dollars). In Indiana alone, this equates to 4,540 new permanent jobs, \$86 million in extra household income, and \$350 million in increased joint development potential. The increased joint development potential stems largely from the rising property values due to increased train operations and particularly the opportunities this presents around multimodal rail stations (Table 3.6).

Table 3.6 Increased Joint Development Potential in Indiana
Millions of 2002 Dollars

| Station | Property Value Increase |
|-------------------------------------|-------------------------|
| Indianapolis | \$121-\$182 |
| Lafayette | \$39-\$58 |
| Gary, Airport | \$32-\$48 |
| Fort Wayne | \$26-\$38 |
| Plymouth | \$21-\$32 |
| Hammond-Whiting | \$16-\$25 |
| Michigan City | \$12-\$18 |
| Warsaw | \$10-\$15 |
| Indianapolis, International Airport | \$7-\$10 |
| Shelbyville | \$0.9-\$1.4 |

Source: *Benefiting Indiana's Economy* (Indiana MWRRS brochure).

The MWRRS is also forecasted to generate additional user benefits in form of reduced travel times for users of the MWRRS; reduced travel times and costs of users of other modes that become less congested; and reduced emissions (travel time savings are shown in Table 3.7). In total, these user benefits are forecasted at \$2.3 to \$3.5 billion (2002 dollars).

Table 3.7 MWRSS Travel Time Benefits

| City Pairs | Current Service | MWRRS (Local) | Auto Drive Time |
|-------------------------|---------------------|---------------------|---------------------|
| Chicago-Fort Wayne | (No service) | 1 hour, 53 minutes | 3 hours, 17 minutes |
| Fort Wayne-Cleveland | (No service) | 2 hours, 55 minutes | 3 hours, 33 minutes |
| Chicago-Indianapolis | 4 hours, 50 minutes | 2 hours, 55 minutes | 2 hours, 57 minutes |
| Indianapolis-Cincinnati | 3 hours, 7 minutes | 1 hour, 32 minutes | 1 hour, 55 minutes |

Source: *MWRRRI Project Notebook, Appendix 8. June 2004.*

Funding and operating strategies for the MWRRS are still being developed. Congress has considered a number of proposals in recent years, including tax-exempt and tax-credit bond programs, to finance infrastructure for regional high-speed rail projects. Funding would be provided at up to an 80 percent Federal to 20 percent state ratio. An equitable method of dividing the state match for routes passing through Indiana will be developed.¹⁸

The implementation of the MWRRS plans hinges on the acceptance and authorization of the freight railroads that own each line. The freight railroads are aware of the MWRRS, and a primary consideration in the planning has been to ensure no negative impacts on freight rail services.

Ohio Hub

The “Ohio Hub” Strategy, also known as Ohio and Lake Erie Regional Rail, was developed through a feasibility study completed by the Ohio Rail Development Commission (ORDC) and the Ohio Department of Transportation (ODOT). The study examined four intercity travel corridors, as illustrated in Figure 3.8:

- Cleveland – Columbus – Dayton – Cincinnati;
- Cleveland – Toledo – Detroit;
- Cleveland – Pittsburgh; and
- Cleveland – Buffalo – Niagara Falls – Toronto.

¹⁸Indiana Department of Transportation. *High-Speed Rail Initiative Frequently Asked Questions and Answers*, available at <http://www.in.gov/indot/7060.htm>.

Table 3.8 Impact of MWRRS Connectivity on Ohio Hub Corridors
Percent Increase in Ridership and Revenue

| Corridors | Ridership | Revenue |
|-------------------------------|------------|------------|
| Cleveland-Detroit | 7% | 7% |
| Cleveland-Buffalo-Toronto | 8% | 8% |
| Cleveland-Pittsburgh | 40% | 52% |
| Cleveland-Columbus-Cincinnati | 37% | 38% |
| Cross Cleveland | 51% | – |
| Total | 23% | 28% |

Source: The Ohio & Lake Erie Regional Rail Ohio Hub Study, High-Speed Scenario Option 1.

NICTD West Lake Corridor Commuter Rail Extensions

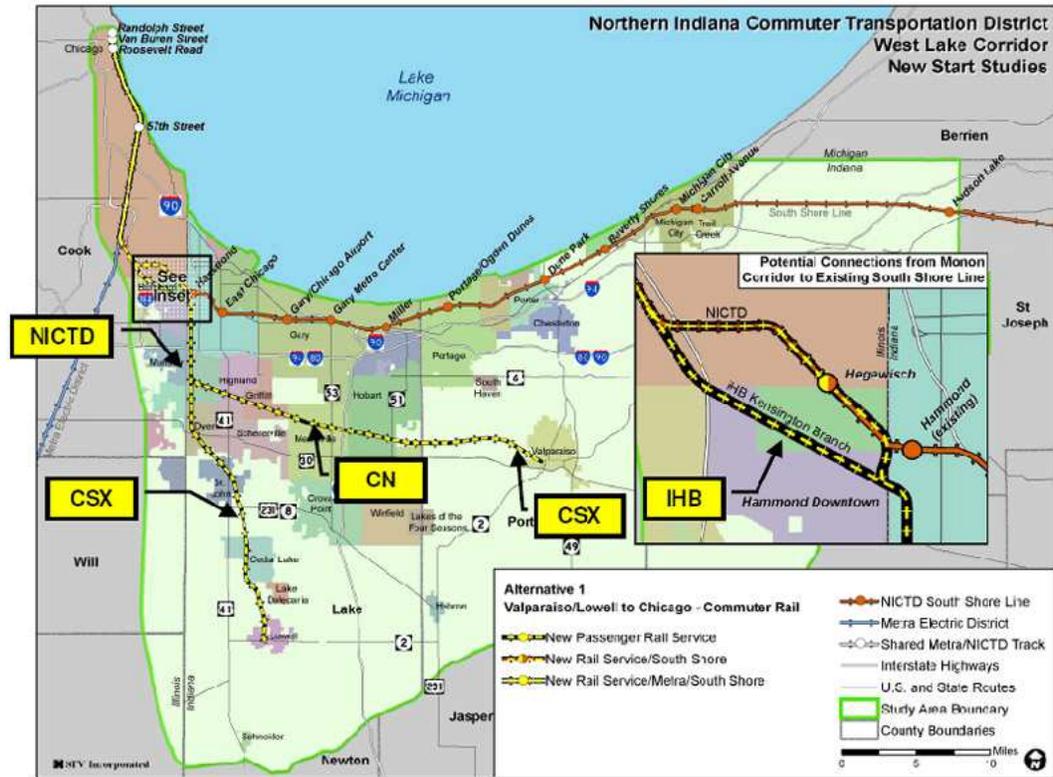
The West Lake Corridor Expansion is a proposed extension of the South Shore Line to the south of its current service area. It is currently in the planning stages with proposed passenger rail extensions from Chicago to Munster, Munster to Valparaiso, and Munster to Lowell. NICTD is currently competing for Federal Transit Administration (FTA) New Starts grant funding for this project. The New Starts Program helps to fund the design and construction of fixed guideway transit investments.

Phase 1 of the West Lake Corridor New Start Studies identified four preliminary alternatives for improving transit in northwest Indiana.²⁰ Alternative 1 involves the construction of commuter rail service between downtown Chicago and both Valparaiso and Lowell, a total of 97 miles. New stations would be built at several points along each route. The routes would use existing track along the Metra Electric District, the South Shore Line, the Indiana Harbor Belt Railroad, the CSX Railroad, and the CN Railroad. Figure 3.9 is a map showing Alternative 1.

Alternatives 2 and 3 consist of rail extensions from downtown Chicago to either Valparaiso or Lowell, respectively. The Valparaiso route would be 51.2 miles long, while the Lowell alignment would be 45.8 miles in length. The proposed stations along each route would be the same.

²⁰Northern Indiana Commuter Rail District. *West Lake Corridor New Start Studies*, available at <http://www.nictd-wlc.com>.

Figure 3.9 West Lake Corridor Extension, Alternative 1



Source: NICTD.

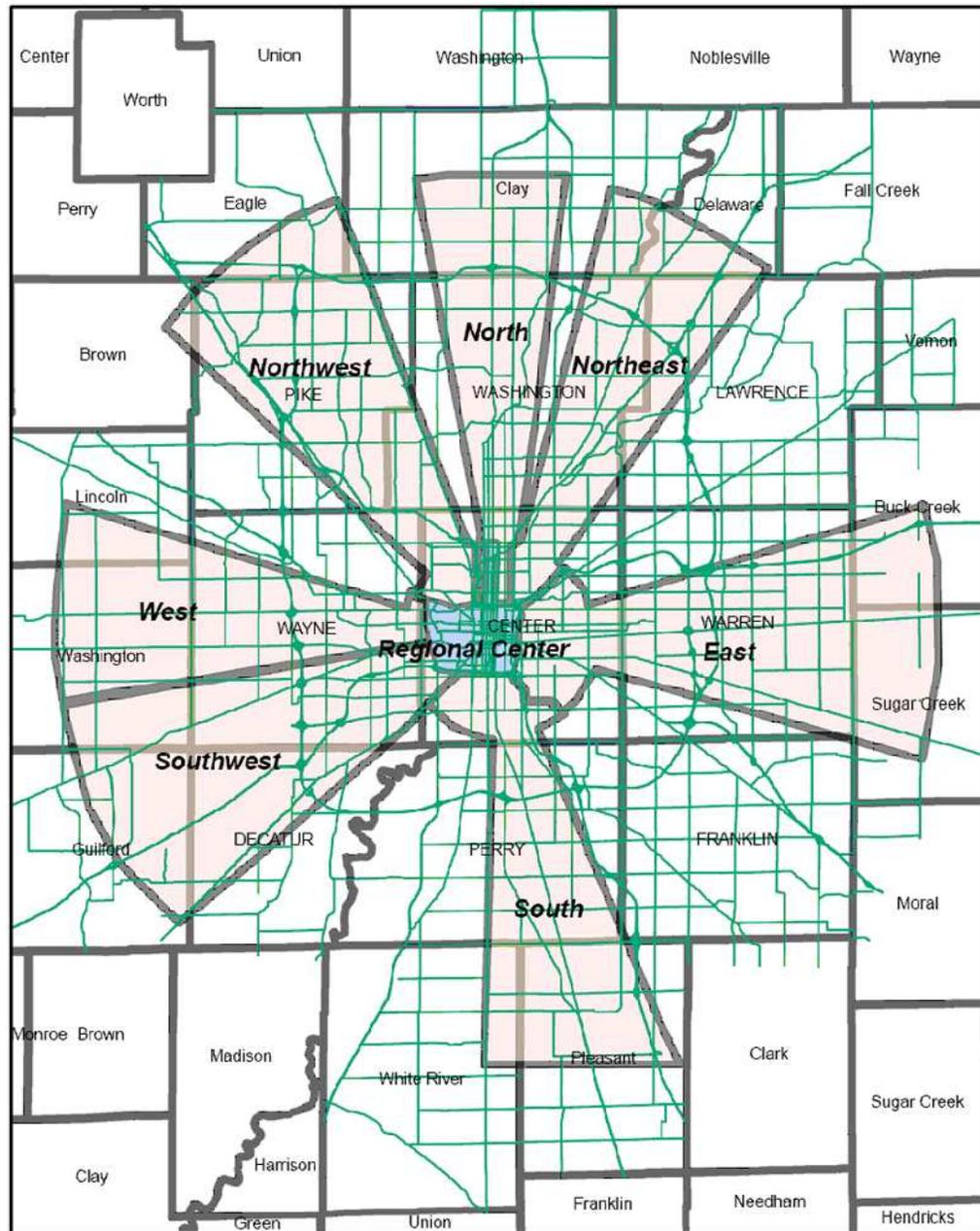
Alternative 4 would create six express bus routes to shuttle riders from the areas served in Alternative 1 to existing South Shore Line stations, where they could transfer to trains bound for Chicago. There is also a baseline alternative that would involve low-cost operational improvements to the existing system without major new investments.

The ultimate result of Phase 1 will be the identification of a Locally Preferred Alternative (LPA) to be incorporated into the Northwest Indiana Regional Planning Commission's (NIRPC's) Long-Range Transportation Plan (LRTP). From that point, the project could move forward to Preliminary Engineering and Environmental Assessment.

Indianapolis DiRecTionS Rapid Transit

Through a series of study phases collectively known as the Regional Rapid Transit Study (“DiRecTionS”), the Indianapolis Metropolitan Planning Organization (MPO) has evaluated options for introducing fixed guideway rapid transit service to address the mobility challenges of Central Indiana. Figure 3.10 shows the proposed network of seven corridors radiating from downtown Indianapolis.

Figure 3.10 DiRecTionS Rapid Transit System



Source: Indianapolis MPO.

A consensus has developed that the first corridor to be developed should connect downtown Indianapolis with the fast growing suburbs to the northeast. A wide range of potential alternatives in the Northeast Corridor has been narrowed to four alignment options and several technology options, representing 13 possible combinations. The goal of the Northeast Corridor Rapid Transit Alternatives Analysis Completion Study, currently in progress, is to identify a preferred alignment and technology for rapid transit in the Northeast Corridor. The combination of the preferred alignment and technology identified in this phase will form a Locally Preferred Alternative (LPA) for refinement and evaluation in a Draft Environmental Impact Statement (DEIS). A Federal Transit Administration (FTA) New Starts request to enter preliminary engineering could follow at the end of the DEIS. Figure 3.6 shows the alignment options under consideration in the Northeast Corridor.²¹ The Indianapolis Public Transportation Corporation (IndyGo) has initiated express bus service in this corridor to address passenger demand before a rail system is implemented.

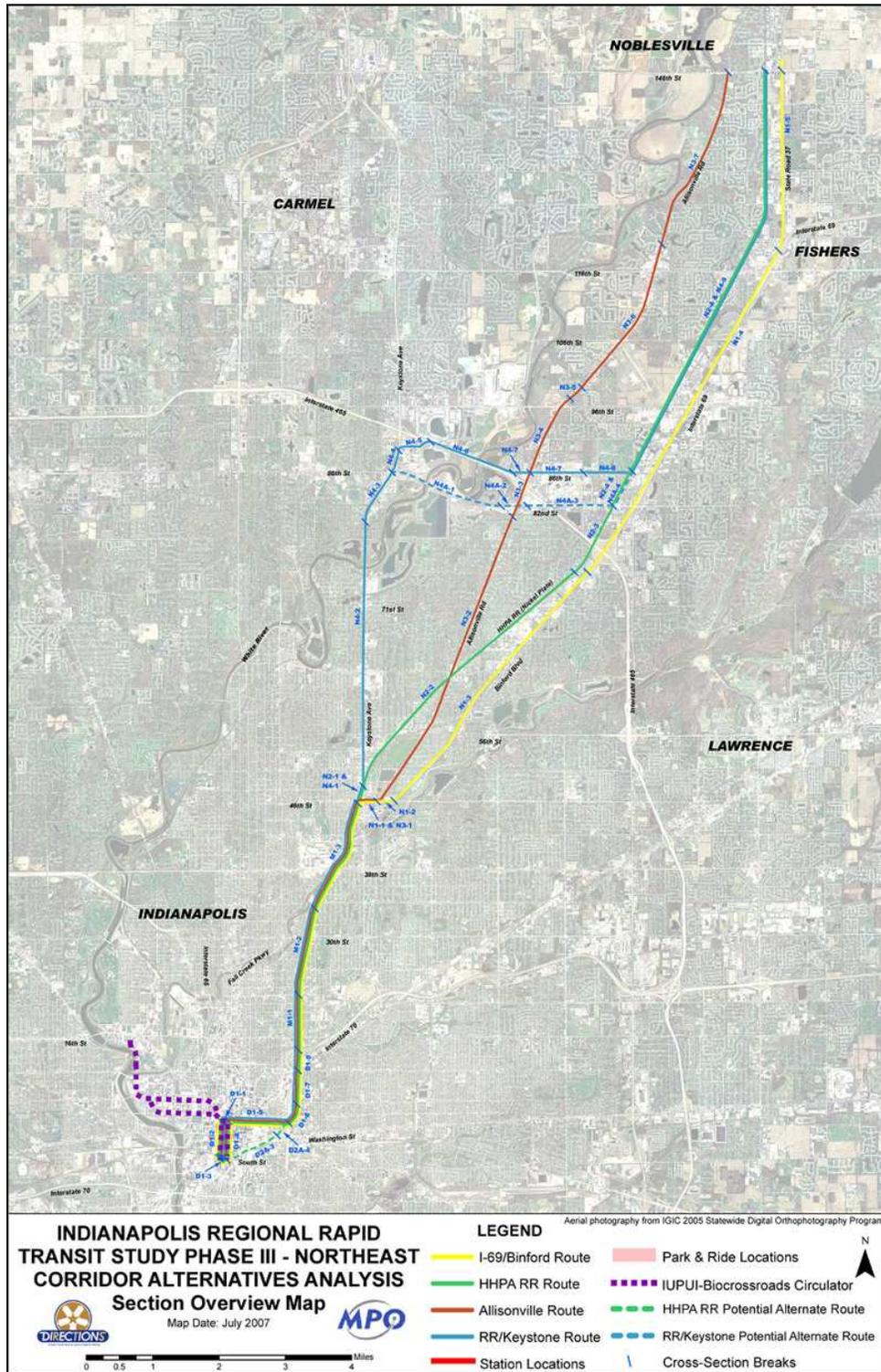
A Regional Transportation Plan has also been initiated by the Central Indiana Transit Task Force. This study is currently evaluating options for a regional transportation investment strategy, including a combination of highway, transit, and road pricing elements from a cost-benefit perspective. The results, which are expected in July 2009, may inform how the nine-county area around Indianapolis develops a regional high capacity transit system.

Bloomington-Indianapolis-Muncie Commuter Rail

The Indiana General Assembly passed an act in 2007 requiring INDOT to study the feasibility of a commuter rail system with service from Muncie to Indianapolis and from Indianapolis to Bloomington, including stops in Anderson, Noblesville, Fishers, Indianapolis, and Bloomington. The study evaluated potential routes, estimated costs, potential ridership, and the effect of the project on existing transportation systems. The Indianapolis - Muncie segment could have impacts on the DiRecTionS Northeast Corridor project.

²¹Indianapolis Metropolitan Planning Organization. *Northeast Corridor Alternatives Analysis Completion Study: Evaluation of Alternatives Report*. Draft final, February 29, 2008.

Figure 3.11 DiRecTionS Northeast Corridor Alignment Alternatives



Source: Indianapolis MPO.

4.0 Freight Rail Economic and Industry Profiles

4.1 COAL AND ENERGY

Energy Consumption and Importance to the Economy

The cost of energy is a key business climate consideration that affects the site location decisions of prospective companies and also influences the willingness of local companies to expand. Businesses expect a reliable flow of competitively priced electricity (not only do blackouts or brownouts bring work to a halt, but they also can destroy production runs in many industries). Electricity expenses also are a factor affecting the overall cost of living in Indiana and the State's attractiveness to residents. Efforts to lower the costs of electricity, including the costs of transporting energy to markets, have a positive impact on Indiana businesses and residents, alike. Due to the intensive use of coal to generate electricity and the commensurately high coal volumes hauled on Indiana railways, the link between freight transportation and energy production is significant. Coal is also an important input to the state's steel industry, as coal-derived coke is used in blast furnaces to produce steel. Much of this coke is produced in Indiana plants.

Indiana's total energy consumption (including all uses) in recent decades has grown proportionately with the State's population. If this relationship holds into the future, Indiana's energy supplies will need to grow to meet the State's projected increases in population. To satisfy its energy needs, Indiana will either need to add generating capacity within the State or import more electricity from other states. Eventually, Indiana's generators will need to increase production and more power plants will need to be built.

Coal is the leading energy source in Indiana. If oil and gas prices continue rising as they have since 2004, the use of coal is likely to increase even more. In Indiana, the annual consumption of coal has increased from 33 million tons in 1960 to 73 million tons in 2005, the highest level on record. According to 2005 figures, coal now accounts for 55 percent of the energy consumed in Indiana, and is essential for fueling Indiana's 32 coal-fired power plants²² and numerous industries. Indiana consumes more coal than any other state except Texas.

²²Indiana Utility Regulatory Commission, 2008; includes 20 large plants (over 200 megawatts) and 12 smaller power generation facilities.

In the future, Indiana will need more fuel(s) to meet demands for electricity generation as its population and economy continue to grow. It is anticipated that a portion of these fuel needs will be met by increasing the use of coal, and there is one large coal-fired power plant currently under construction in Indiana (a 630 megawatt Duke Energy facility in Edwardsport, Knox County is expected to come on-line in 2012).

Natural Resource Production

Indiana has historically ranked as one of the larger producers of coal in the country. Indiana's coal production grew from 26 million tons in 1995 to 35 million tons in 2006, a 35 percent increase. Coal mined in the southwestern part of the State is transported by rail and truck to utilities throughout the State and region (e.g., Ohio River Valley) to generate electricity. While only about 23 percent of all the coal consumed in Indiana was delivered by truck, nearly this entire share was produced in-state. Just over 50 percent of Indiana-produced coal reached Indiana destinations by truck. While the Illinois Basin variety of coal mined in Indiana is presently less favored by utilities due to its high sulfur content, its abundance and the introduction of cleaner coal technologies are expected to drive increased use in the future.

Logistics and Transportation Issues

Even with its own vast coal deposits, substantial shipments of coal are transported to Indiana by train from other states, particularly Wyoming and West Virginia. Coal is the number one commodity carried into the state by rail, and given current commodity prices it is likely to maintain its prominence in the state's energy mix in the face of rocketing oil and gas prices. In 2005, coal accounted for 47 percent (21 million tons) of all goods transported by rail (by weight) with an Indiana destination. Because of its weight and the volumes required to sustain electricity production at power plants, rail and barge are the preferred modes for transporting coal.

The transport of fuels (i.e., coal and petroleum) by rail is a leading component in the cost of the energy, and the capacity and cost of rail transportation to and through Indiana will directly influence electricity prices in the state. Indiana's electricity costs are the ninth lowest in the nation, giving the State's manufacturers a cost benefit over most other locations, a strong advantage as the State competes worldwide for attracting business.²³ Higher coal consumption in Indiana will depend, in part, on the railroads' and the Mississippi-Ohio River system's ability to transport coal, particularly the low sulfur variety from Wyoming's Powder River Basin, into the State.

²³U.S. Department of Energy, Energy Information Administration, November 2007 (data are for 2006).

Currently, coal traveling to Indiana by rail from points west is faced with one of the nation's largest rail bottlenecks in Chicago—a bottleneck which is expected to worsen in the future. Direct west coast service to Indiana bypassing Chicago, or major rail improvements to the Chicago area, could improve travel times and reduce costs for shipping coal from western states to Indiana.

Greater access to the State's own coal mines, primarily in southwestern Indiana, and greater connectivity between these mines and consumption points would diminish the need for interstate coal shipments. The "last mile problem" is a term describing the disconnect between major rail corridors in Indiana and the state's coal mines, whereby it is often more economical for coal customers, particularly those in the northern part of the state, to import fuel from as far away as Wyoming or West Virginia, rather than from Indiana mines. While there are a number of coal-fired power plants in the vicinity of Indiana's southwest coal-producing region, there are also plants around Indianapolis, Chicago, and throughout the Ohio River valley.

According to the Energy Information Administration, over half of the intrastate coal movements in Indiana, by weight, traveled by truck. As scrubber technology is installed in all of the State's power plants, the potential to burn Indiana coal will increase substantially. The remaining in-state coal supply is extensive, and increased production may result in considerable strain on the secondary highway system in southwest Indiana unless the railroads carry a greater share of this traffic.

A May 2007 study published by the Center for Coal Technology Research at Purdue University recommended the development of an "Indiana Coal Corridor," as shown in Figure 4.1.²⁴ The proposed corridor does not call for any new infrastructure investment, only the designation of a quasigovernmental body that would negotiate and obtain trackage rights in order to act as a single end-to-end operator, connecting southern coal mines with northern power plants, mainline railroads, and ports. Such an entity would seek to increase the share of Indiana coal used in the state's power plants, and also position the state to increase coal exports through its Great Lakes and Ohio River ports. Constraints in the transportation network are a primary inhibitor of greater coal extraction and exporting in Indiana.

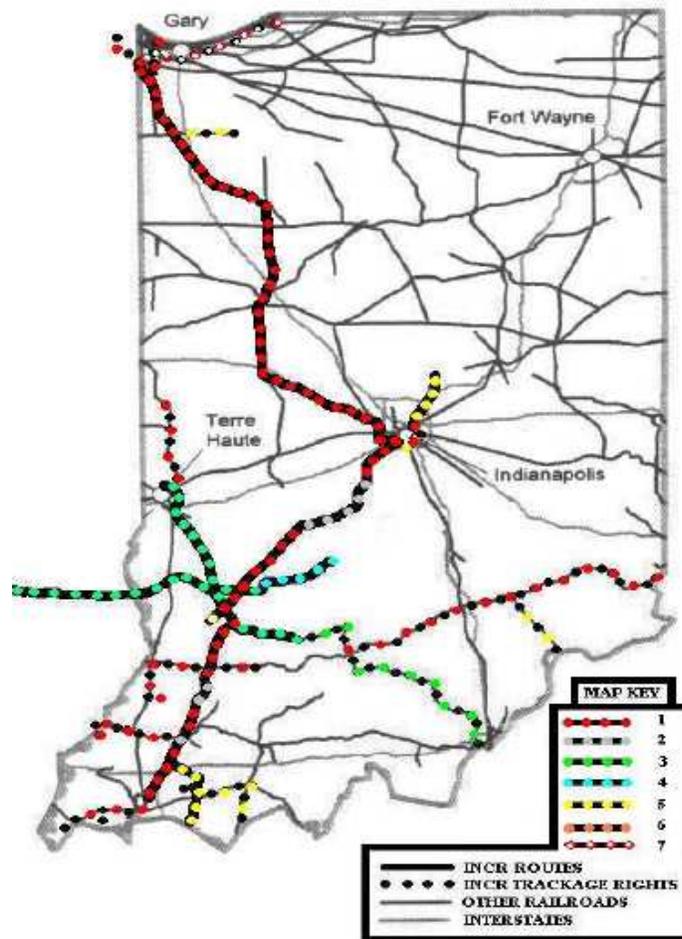
On the Ohio River, coal is a significant commodity, both exported from mines and received by power plants. Currently, a substantial portion of the coal entering Indiana from West Virginia arrives by Ohio River barge, and while nearly all of the coal arriving from Wyoming travels by rail, transshipment to barge at the Missouri River is an alternative for reaching southern Indiana power

²⁴Thomas F. Brady and Chad M. Pfitzer. *A Prescriptive Analysis of the Indiana Coal Transportation Infrastructure*. Center for Coal Technology Research, Purdue University, May 2007.

plants, though not currently used. Other commodities traveling between southern Indiana and points to the west do use this mode, such as Waste and Scrap, which moves between Indiana and Nebraska by barge.

Ultimately, the decisions made in the next several years concerning how to meet Indiana’s energy needs will have a bearing on the utilization of the State’s rail and waterway systems. If clean-burning natural gas and renewable energies become the preferred option, the use of rail to transport coal is likely to go into gradual decline as older power plants become antiquated. Alternatively, mandates to install scrubbers in Indiana power plants and other “clean coal” technologies are improving the outlook for coal mining in the State. The decisions made by Indiana’s energy providers to address the State’s future electricity requirements need to be monitored by policy-makers as they will have an effect on how the State’s freight transportation system is used.

Figure 4.1 Proposed Indiana Coal Corridor



Source: Thomas F. Brady and Chad M. Pfitzer. *A Prescriptive Analysis of Coal Transportation Infrastructure*. Center for Coal Technology Research, Purdue University, May 2007.

4.2 AGRICULTURE

Agriculture and food are two interrelated industries. “Agriculture” represents the growing of crops (e.g., soybeans, corn, wheat) and the raising of livestock, while “food” represents the manufacture of the items commonly found on grocery store shelves (e.g., bread, juice, cheese, meat, soda, beer, etc.) other than fresh produce. Both agriculture and food use roadways, railroads, and waterways for inbound materials, as well as for transporting goods to more distant markets.

Indiana’s agriculture industry is the 13th largest in the country, producing crops and livestock valued at \$6.9 billion in 2006. While the State ranks fifth in the country in terms of the number of hogs, Indiana’s agriculture industry, based on value, is led by crop production (e.g., corn and soybeans). In 2006, the value of crops grown in the State reached \$3.9 billion, ranking Indiana ninth in the nation.

Indiana, joined by Iowa, Illinois, Nebraska, and Minnesota, is one of the nation’s top-tier growers of corn, producing nearly one billion bushels in 2007. Historically, there has been a slight upward trend in Indiana corn production since 2000 and the State generally accounts for about eight percent of the nation’s corn harvest (See Chapter 4 for additional discussion). With the expanding use of ethanol which uses corn as its primary feedstock and increasing worldwide demand for corn as an animal feed, Indiana’s corn production increased markedly in 2007. As of the middle of 2008, there were seven ethanol plants operational in Indiana, six under construction, and four proposed. All but one of the seven operating plants opened within the past two years. Upon completion, the six plants currently under construction will more than double the State’s current ethanol production, which is expected to exceed 1.1 billion gallons by the end of 2009.²⁵ These demand factors (animal feed and ethanol production), combined with higher prices being commanded by corn, are likely to push Indiana’s corn harvest up in coming years. Corn is grown abundantly throughout most of Indiana, but the highest production levels are found in the northwestern (Benton, White, Montgomery, and nearby counties) and extreme southwestern parts (Knox County) of the State.

After corn, the second leading crop grown in Indiana is soybeans. Indiana ranked as the fourth largest grower of soybeans in the United States in 2007, following Iowa, Illinois, and Minnesota. Indiana’s soybean harvest, however, fell to 211 million bushels in 2007 after reaching historic highs between 2004 and 2006. Indiana’s soybean harvest has been trending slowly upwards since 1990 and generally fluctuates between 200 million and 300 million bushels per year. Indiana’s share of total U.S. soybean production, ranging from eight to nine percent, is similar to the State’s share of the nation’s corn harvest. Long term,

²⁵ Biofuels Indiana. <http://www.in.gov/isda/biofuels/>, accessed August 21, 2008.

demand for Indiana's soybeans will be stimulated by factors similar to those that are driving up production for corn – renewable fuels and worldwide demand for both corn and soybeans to be used as feeds or processed into food products. Five plants are currently operational in Indiana to refine soybeans into biodiesel fuel.²⁶ A plant in Claypool (Kosciusko County), opened in 2007, is the largest biodiesel production plant in the world and consumes a large portion of the soybeans grown in Indiana. At the center of the nation's agricultural belt and with its manufacturing expertise, Indiana will continue to be an attractive state for developing renewable energy plants in coming years. These trends will encourage soybean and corn cultivation to increase in Indiana (and other Midwestern states) in the future. Soybeans are grown throughout Indiana, with the largest concentrations of acreage and production located in the northern part of the State.

Indiana and the Midwest for decades have been the breadbasket to the world, exporting huge volumes of grain to countries with inadequate tillable land or inefficient agricultural sectors. The value of Indiana agricultural exports reached \$2.1 billion in 2006 and has been growing substantially in recent years. Indiana's agricultural exports are the 10th highest in the nation. The State is the 5th ranking exporter of feed grains (includes corn) and is 4th in soybean exports. Indiana also is a top 10 exporter of poultry products, seeds, and live animals/meat.

The value of Indiana's food products output reached \$6.4 billion in 2006, ranking Indiana 14th among the states, and increasing by 39 percent between 1997 and 2006, a rate of increase similar to the national average. Food production is an important part of the Indiana economy, accounting for 7 percent of the State's manufacturing output. Within the food industry, Indiana is a national leader in the milling of grain and oilseeds (rank #4), bakeries and tortillas (#10), and dairy products (#14).

Logistics and Transportation Issues

Freight transportation plays a crucial role in Indiana's food and agriculture industries. The agriculture industry ships goods that are heavy, bulky, and relatively low value per ton, and these products often must be shipped long distances to reach domestic and global markets. This means that transportation costs are a significant portion of the price of delivered shipments and products. For this reason, agricultural shippers stress the importance of lower-cost and reliable rail and barge transportation to maintain their competitiveness. Higher-cost truck transportation also is crucial for transporting key inputs (fertilizers, seeds, feed, etc.) to farms and to bring harvests to loading facilities, processing plants, and other markets.

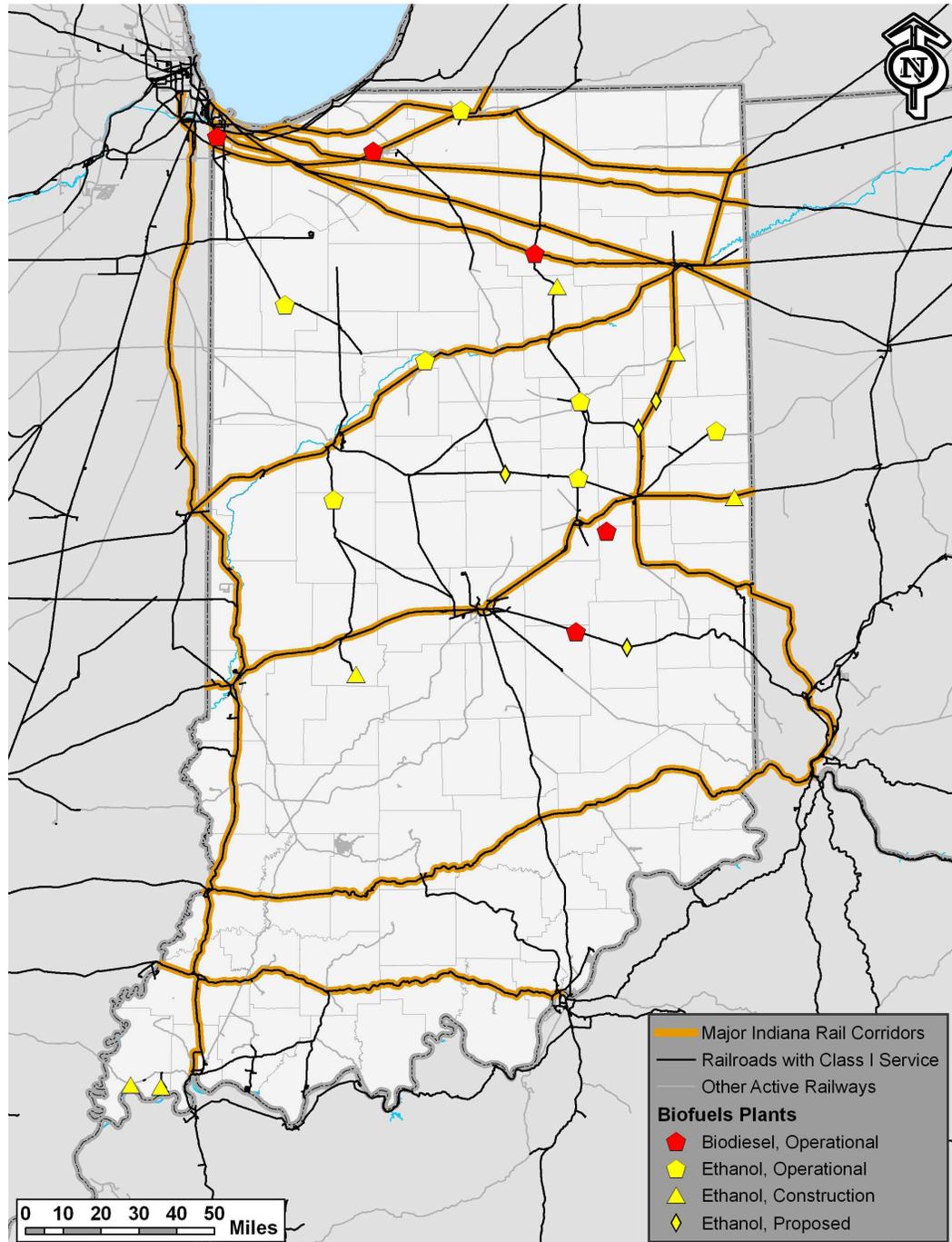
²⁶ Indiana Department of Agriculture

Indiana farmers are in head-to-head competition with growers around the world such as Brazil in soybean and corn exports. The condition of the State's transportation infrastructure and availability of transportation services, particularly rail, for transporting soybeans and corn reliably and cost-effectively is important to the competitiveness of Indiana's agriculture and food sector. The efficient, reliable, and low-cost movement of Indiana's agricultural commodities to coastal gateways will be a determinant in how well the State can compete in overseas markets in the future.

Rail is important for shipping grains for export, but three distinct challenges face the agricultural sector in Indiana. First, shippers of bulk agricultural products face growing competition with the retail industry and coal/electric power industries for dwindling space on the national rail network. Transportation of manufactured goods has higher potential profit margins for the railroads, and the railroads have also invested heavily in coal transportation infrastructure in the Powder River Basin, so these commodities have some inherent competitive advantages over bulk agricultural goods in attracting interest from the railroads. In addition, a longstanding shortage of hopper cars threatens to constrain exports, particularly as the exploding ethanol and biodiesel industries drive increased overall grain production. This car shortage will disproportionately affect smaller producers without the resources to purchase their own equipment. Finally, the inability to accommodate industry-standard 286 thousand pound-per-axle bulk commodity cars threatens the ability of short lines to provide competitive service to grain producers. This is particularly problematic in the 16 Indiana counties without Class I service. Without access to adequate rail service, agricultural shippers must shift to trucks, increasing their transportation costs and making them less competitive with major agricultural producers in Argentina, Australia, and Brazil.

Indiana's central location and ample crop production will continue to position the state as a favorable choice for siting biofuel facilities, potentially driving demand for inbound corn and soy shipments from surrounding states. This, combined with increasing overseas demand for these grains, will also continue to increase demand for rail services, including short line and regional rail links to areas not served by primary lines. Figure 4.2 shows the locations of existing and proposed biofuels plants in Indiana. Nearly every existing and proposed facility is located along a Class I rail line. In addition, an ethanol plant is currently under construction on the grounds of the Port of Indiana at Mount Vernon.

Figure 4.2 Existing and Planned Biofuels Plants in Indiana



Source: *National Transportation Atlas Databases (NTAD) 2008*. U.S. DOT, Research and Innovative Technologies Administration's Bureau of Transportation Statistics.

The sharp increase in biofuels production poses an additional strain to a Class I network that is already nearing capacity. The type of freight movements generated by a biofuels plant, particularly the demand for raw materials, may be less than ideal for the Class I operators due to the relatively short haul distance.

In the face of capacity constraints these shipments may be at risk of being shed in favor of more profitable business such as long-haul, high-value intermodal trains. The result would be a shift to trucks, which would drive up the price of refined biofuels, or increased reliance on short line and regional railroads which already face challenges with regard to hauling bulk goods. Growing demand for corn and soy as inputs to biofuel production underscores the economic importance of a robust network of short-line and regional railroads that can adequately support short-haul bulk goods transportation.

4.3 STONE AND CONSTRUCTION PRODUCTS

Consumption and Production

There are two main drivers for growth in the Indiana construction industry: 1) economic expansion; and 2) population growth. Economic growth stimulates new investment in commercial structures such as office buildings, industrial facilities, warehouses, laboratories, etc., while a growing population translates to strong demand for housing, retail centers, schools, and other public infrastructure. Due to its central location, Indiana also benefits directly from overall U.S. growth which further encourages the construction of warehousing, distribution, and transportation facilities within the State to serve national markets. Recently, the expansion of the Indiana tourism industry also has been a boon for the State's construction sector, particularly for hotels in the Indianapolis area.

The construction industry, until recently, has been growing in Indiana. The total value of construction contracts in Indiana was \$13.5 billion in 2006, down slightly from record levels reached in 2005. Indiana generally accounts for between 2.0 percent and 2.5 percent of total U.S. construction, as discussed in Chapter 4. Indiana's share has declined somewhat since 2000 as Sunbelt states such as Florida received an inordinate amount of construction work, mostly for housing. The construction industry is a primary end user of a range of supplies, including lumber, aggregate, and steel carried by rail, trucks, and barges. The timeliness of freight deliveries is crucial to the construction industry, making transportation reliability a primary concern. Congestion and delays add hours and costs to deliveries needed by construction contractors. Some construction inputs are perishable (e.g., ready-mix concrete only lasts two hours before thickening) and missed shipments can lead to work stoppages. Although construction is sensitive to economic cycles, including the economic uncertainties being experienced presently, the overall future growth trend for construction in Indiana is likely to remain positive as the State's population and economy resume a long-term trend towards moderate growth. As evidence of the cyclical nature of construction, Indiana housing permits were down 15 percent in 2007 .

Indiana quarries about 50 million tons of limestone per year, accounting for about five percent of the U.S. total. Shipments of Indiana limestone, gravel, and other stone are transported mostly by truck with much lower volumes carried by

rail and water. Beyond its use as aggregate, the limestone produced in Indiana also is shipped nationwide and to markets throughout the world, including Italy, England, China, and Japan to be used as facing for buildings (“dimensional” limestone). Presently, Indiana dimensional limestone is being used to construct the new Yankee Stadium in New York City. Indiana’s quarries account for over two-fifths of U.S. production of dimensional limestone. Historically hauled by rail, Indiana dimensional limestone, due to its high value, is now mostly trucked long distances around the country.

Logistics and Transportation Issues

Indiana’s construction industry depends on rail and trucks to keep building and infrastructure construction sites supplied in a timely manner. Delays resulting from congestion can ruin concrete deliveries and raise costs. Limestone aggregate and limestone dimensional stone (for buildings) are major inputs to the construction industry and Indiana is a leading supplier of both. Rail (hopper cars) and trucks transport Indiana’s limestone aggregate while flatbed rail cars and trucks carry Indiana’s dimensional stone to major building projects across the country.

The mining and mineral extraction sectors entail large volumes of low-value shipments, and these commodities are traditionally strong candidates for movement by rail. Indiana’s top trading partners for outgoing movements of stone, gravel, sand, and metals, are its four neighboring states, which collectively accounted for 37 percent of total outbound tonnage of these commodities from Indiana in 2007. Overall, nearly 30 percent of raw minerals and metals shipped from Indiana to other states in 2007 were transported by rail, barge, or other intermodal modes (including combined truck and water shipments), nearly equal to the national average for interstate shipments of these commodities²⁷. If the mainline interstate rail corridors in Indiana reach capacity as described in Chapter 5, shipments currently moving by rail may be shed in favor of higher value commodities, particularly intermodal and automobile shipments. This would threaten these important sectors of the Indiana economy.

4.4 STEEL AND MANUFACTURING

Indiana’s defining economic characteristic compared to the nation and most other states is the relative size of its manufacturing sector. In 2006, manufacturing accounted for well over one-quarter of Indiana’s gross state product compared to 11 percent for the nation. In fact, manufacturing is more concentrated in Indiana

²⁷ FAF2 Provisional Commodity Origin-Destination Data: 2007.

than any other state based on relative contribution to gross state product.²⁸ Indiana's share of U.S. manufacturing jobs increased from 3.0 percent in 1982 to 4.0 percent in 2006. During the same period, Indiana's share of the nation's manufacturing output rose from 3.2 percent to 4.1 percent. This growth was fueled by the motor vehicles and motor vehicle parts and chemicals (includes pharmaceuticals) industries.

With its huge manufacturing sector commanding a disproportionately large part of its output, Indiana's economy is less dependent than the United States' economy on service-related industries, including retail, finance, real estate, business, and professional services; however, growth in these areas will have a significant impact on the growing freight industry in Indiana.

While employment in the Indiana manufacturing sector has been *dropping*, (similar to almost all other states), manufacturing output in Indiana has been *rising*. Indiana manufacturers have invested heavily in automation and sophisticated process technologies, reducing their need for labor while maintaining and increasing output. The drop in manufacturing employment also reflects the internal restructuring of manufacturing firms. To lower costs and maintain competitiveness, and focus on core competencies, manufacturers have been outsourcing functions, such as human resources, payroll, maintenance, engineering, and logistics services. This has shifted employment from manufacturing to other sectors, notably the service sector, which has seen continuing increases in employment. The number of manufacturing jobs in Indiana declined by 16 percent between 1997 and 2006, but manufacturing output, measured in the value of goods produced, increased by 18 percent over the same period.²⁹

Looking at Indiana's manufacturing performance over the last decade, the State's improvements are broad-based. In real terms, manufacturing output increased in each of the State's four largest manufacturing industries - motor vehicles and parts, pharmaceuticals, fabricated metals, and food processing - between 1997 and 2006.³⁰ Output also surged within the quickly emerging medical equipment industry, rising by 88 percent, from \$2.2 billion in 1997 to \$4.2 billion in 2006. Although Indiana continues to rank among the top three states in the

²⁸Following Indiana (28 percent), manufacturing accounts for 21 percent of the economies of Wisconsin and Louisiana.

²⁹Bureau of Economic Analysis, manufacturing GDP growth adjusted for inflation.

³⁰Due to the conversion of the U.S. industrial classification system from SIC to NAICS codes, industry-specific data from the Economic Census and Annual Survey of Manufactures prior to 1997 is not directly comparable to more recently released data. For this reason, the industry-specific comparison is for the 1997-2006 period.

manufacture of steel,³¹ the value of the state's steel production actually declined between 1997 and 2006 as a result of foreign competition and a period of consolidation within the industry.

Indiana's recent increases in U.S. manufacturing share have been led by the motor vehicles and medical equipment industries. Between 1997 and 2006, the State's share of the nation's motor vehicle-related production increased from 8.5 percent to 12.2 percent, while its share of medical equipment output rose from 5.8 percent to 7.6 percent. Growth in Indiana's motor vehicle industry has been fueled by the opening of a Toyota assembly plant in Princeton in 1998, increased production at the Subaru-Toyota facility in Lafayette, a new Hummer facility in Mishawaka, and the success of large suppliers, including Cummins in Columbus (diesel truck engines and power generation equipment), in competing in both the U.S. and world markets. Honda's recent decision to open an assembly plant in Greensburg, in southeastern Indiana, underscores the State's preeminent position within the motor vehicles industry. Geographically, Indiana is situated at the heart of North American motor vehicle production, and is within a one-day truck drive to dozens of assembly plants in the Midwest, Canada, and the U.S. Southeast.

While there is no doubt that Indiana has been affected by competition from other countries, the State's manufacturing sector has continued to thrive due to the State's ability to retain, grow, and attract technologically advanced manufacturers. However, Indiana's manufacturers must strive to stay in front of competitors from lower-cost countries, which will put price pressure on manufactured goods. Indiana manufacturers are succeeding through the adaptation of technology and quality in conjunction with aggressive efforts to control costs.³²

Due to an economy with strong manufacturing and agricultural sectors, the value of Indiana's exports are equal to about 10 percent of the Indiana gross state product, a figure greater than the 8 percent average for the United States. With the recent surge in exports, Indiana exports have increased from about 7 percent in 2003 to 10 percent in 2007. Longer term, international trade is anticipated to account for a growing share of the U.S. economy, a trend that will likely be replicated in Indiana which, today, is more export-intensive than the U.S. overall.³³ Increased trade translates to higher freight volumes and more demands being put on the rail, air, and motor carriers serving the State.

³¹The value of Indiana primary metal shipments is essentially the same as Ohio's and Pennsylvania's – these three states are far ahead of all other states in steel production.

³²For example, while other countries make cheaper steel for commodity markets, Indiana competes successfully in the manufacture of high-grade, specialized steels.

³³The value of U.S. merchandise exports is expected to increase from 7 to 8 percent of gross domestic product today to approximately 18 to 20 percent of GDP by 2030 based on Cambridge Systematics' analysis of Global Insight's forecast for total U.S. trade.

Logistics and Transportation Issues

Manufacturing is more dependent on transportation than most other industry sectors and counts on the reliability, flexibility, and connectivity provided by the rail, water, air, and road networks to produce and deliver products. Manufacturers keep inventories low to reduce costs and this requires a dependable, multimodal supply chain.

Though trucks and highways are the backbone of manufacturing logistics, rail also is crucial to Indiana manufacturers, especially for shipping heavy goods (e.g., steel) and chemicals. While Indiana's rail links to the East Coast (and key international gateways) are considered excellent, rail moves to the West Coast are problematic as trains must often go through Chicago which slows down trips due to congestion. This adds to manufacturers' costs, potentially erasing the efficiencies and cost advantages of using rail. Improving the flow of rail traffic through the Chicago region or identifying alternative routes to the West Coast would add to the efficiency of Indiana's manufacturers by lowering costs and helping them reach distant markets more effectively.

5.0 Freight Rail System Condition and Performance

5.1 INFRASTRUCTURE AND LEVEL OF SERVICE

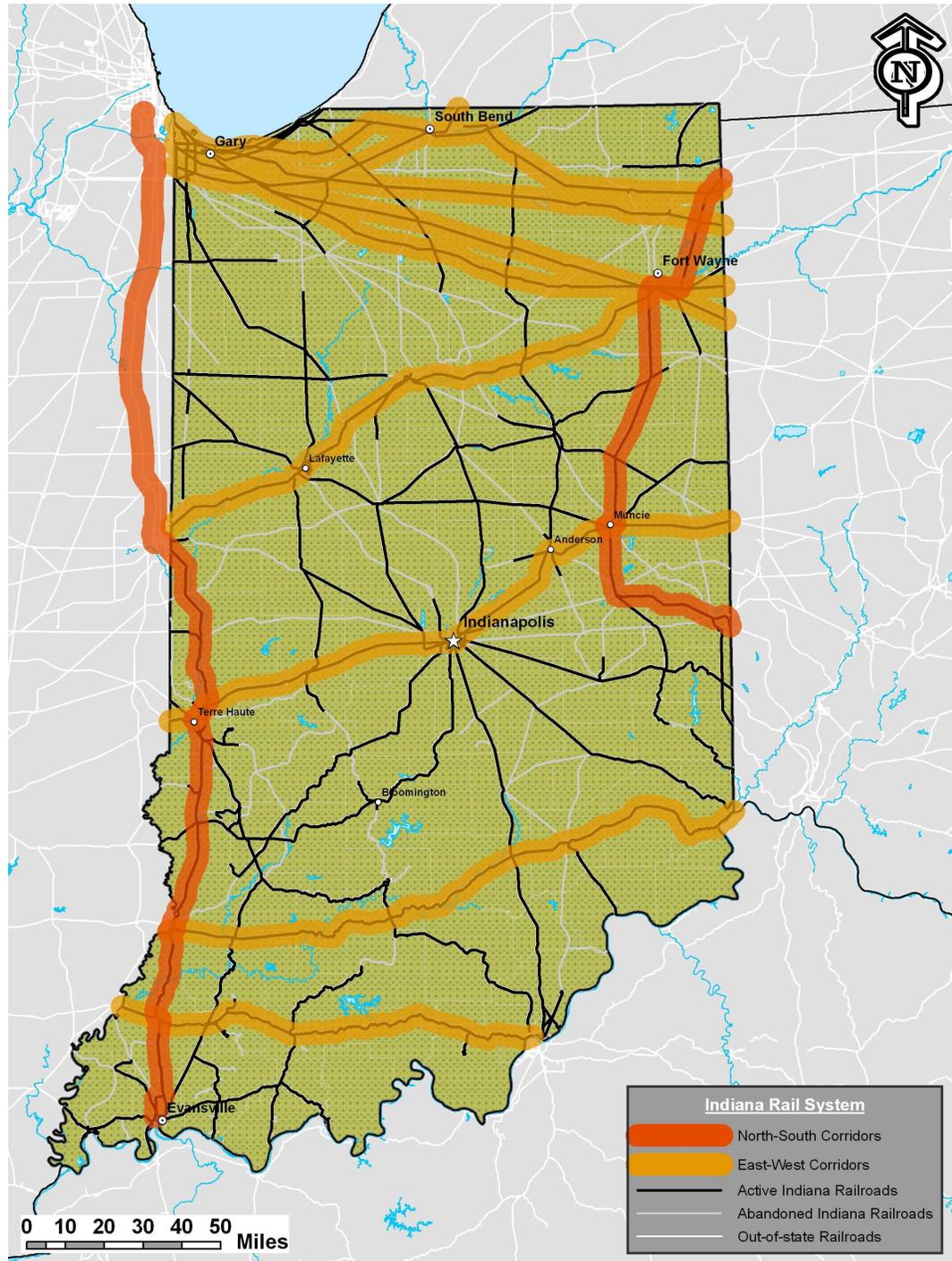
Rail Network

Three of North America's seven Class I rail operators provide service within the State of Indiana: CSX Transportation, Inc. (CSX), Norfolk Southern (NS), and Canadian National (CN). In addition, 35 short-line and regional carriers operate in Indiana. According to the Association of American Railroads (AAR), in 2005, the State's rail network included 4,165 route miles (excluding trackage rights), with 88 percent of those being operated by Class I companies. The dominant operators are CSX and NS, which operate 76 percent of all Indiana route miles.

The recent acquisition of the EJ&E by CN will likely divert some CN traffic from lines heading into Chicago to the EJ&E's 198-mile circumferential line around Chicago from Waukegan, Illinois to Gary, Indiana where the CN mainline intersects it. The EJ&E connects with all the major railroads entering Chicago, serving steel mills, petrochemical customers, and distribution centers, and handling a range of commodities including bulk raw materials and finished products. Coal is also moved to utility plants in Illinois and Indiana via the EJ&E. This acquisition should result in substantial changes in rail traffic patterns in northwest Indiana and neighboring Illinois, with some EJ&E segments experiencing a significant increase in trains while certain existing CN segments would see a reduction. According to documents distributed at the STB's January 2008 EIS scoping meetings, the volumes on the rail segment from Chicago Heights, Illinois to Griffith, Indiana will increase from 10 to 34 trains per day; from 8 to 29 trains per day between Griffith and Van Loon,; from 10 to 30 per day between Van Loon and Cavanaugh; and between Cavanaugh and Gary from 12 to 32 per day.

There are eight major east-west rail corridors crossing Indiana, four that radiate from Chicago, and four that radiate from St. Louis. These represent some of the most heavily traveled rail corridors in the nation, particularly the CSX, NS, and CN lines out of Chicago. There are only two major north-south lines through Indiana, one operated by CSX that follows the Illinois border, and one operated by NS that follows the Ohio border. Of these 10 major rail corridors, the only one that passes through Indianapolis is the CSX east-west line between St. Louis and the east coast. Figure 5.1 shows current active and abandoned rail lines in Indiana.

Figure 5.1 Active and Abandoned Rail in Indiana



Source: Indiana DOT, 2005. Obtained from Indiana Geological Survey, *A GIS Atlas for Indiana*, http://129.79.145.7/arcims/statewide_mxd/download.html.

In 2007, 5.3 track-miles owned by Class I railroads and 2.4 track-miles owned by short-line and regional carriers were abandoned in Indiana (Table 5.1). Over the past five years, 85 miles have been abandoned by all railways in Indiana.

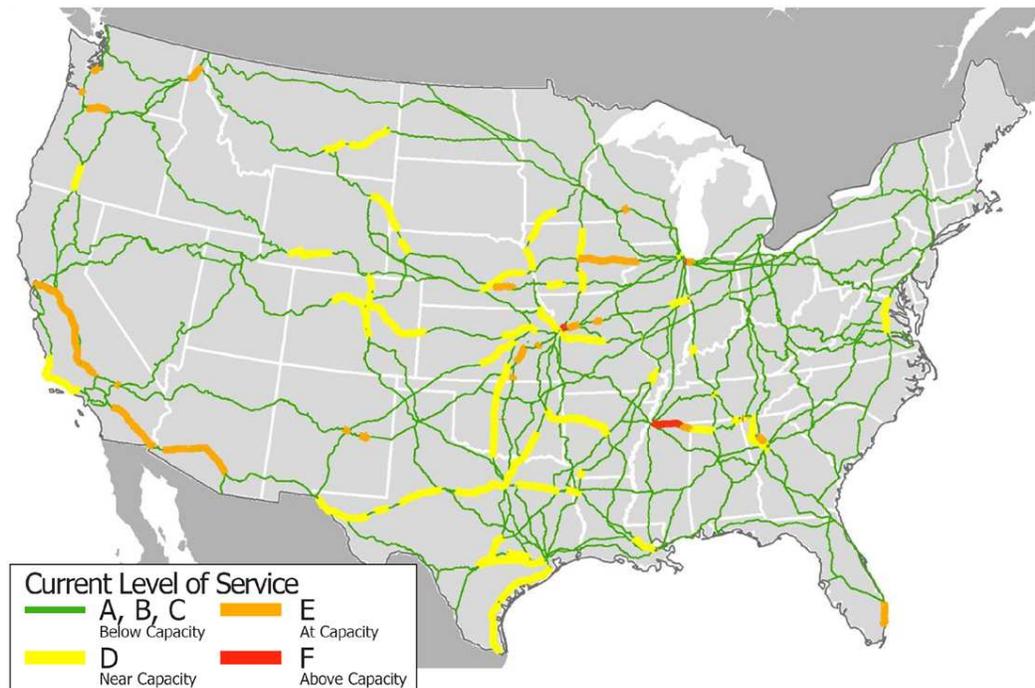
Table 5.1 Abandoned Track-Miles in Indiana

| | 2003 | 2004 | 2005 | 2006 | 2007 |
|---------------------|------|------|------|------|------|
| Class 1 | 34.6 | 5.9 | 8.6 | 0 | 5.3 |
| Short-Line/Regional | 0.6 | 0 | 24.9 | 2.6 | 2.4 |

Source: Indiana Railroad Abandonments, Indiana DOT.

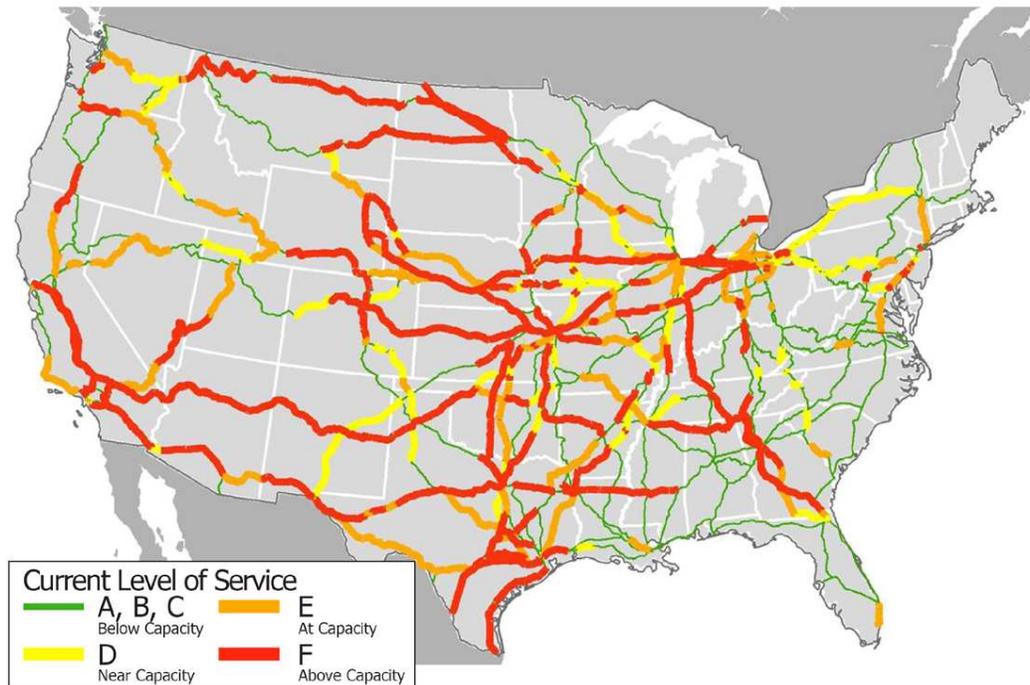
In September of 2007, the AAR released a report which served as an “assessment of the long-term capacity expansion needs of the continental U.S. freight railroads.” Focusing on Class I primary freight rail corridors, the study developed an estimate of infrastructure investment needs for the 2007 to 2035 timeframe based on U.S. DOT projections of population growth, economic development, and trade. Using extensive waybill data, assumptions about railway capacity, and data from the railroads, the project team developed a current LOS rating for each segment of the primary corridors. This is shown in Figure 5.2. The study used commodity flow growth projections to determine the future level of service on the same network, assuming no capacity improvements are made. Predicted LOS in 2035 without improvements is shown in Figure 5.3. Figure 5.2 and Figure 5.3 indicate that some rail segments in northwest Indiana are already operating at capacity, and that large portions of CSX and NS tracks in Indiana are poised to be at LOS F by 2035 without improvements.

Figure 5.2 Current Rail Level of Service 2007



Source: *National Rail Freight Infrastructure Capacity and Investment Study*, prepared for Association of American Railroads, Cambridge Systematics, September 2007.

Figure 5.3 Projected Rail Level of Service *without* Improvements 2035



Source: *National Rail Freight Infrastructure Capacity and Investment Study*, prepared for Association of American Railroads, Cambridge Systematics, September 2007.

Rail/Truck Intermodal Facilities

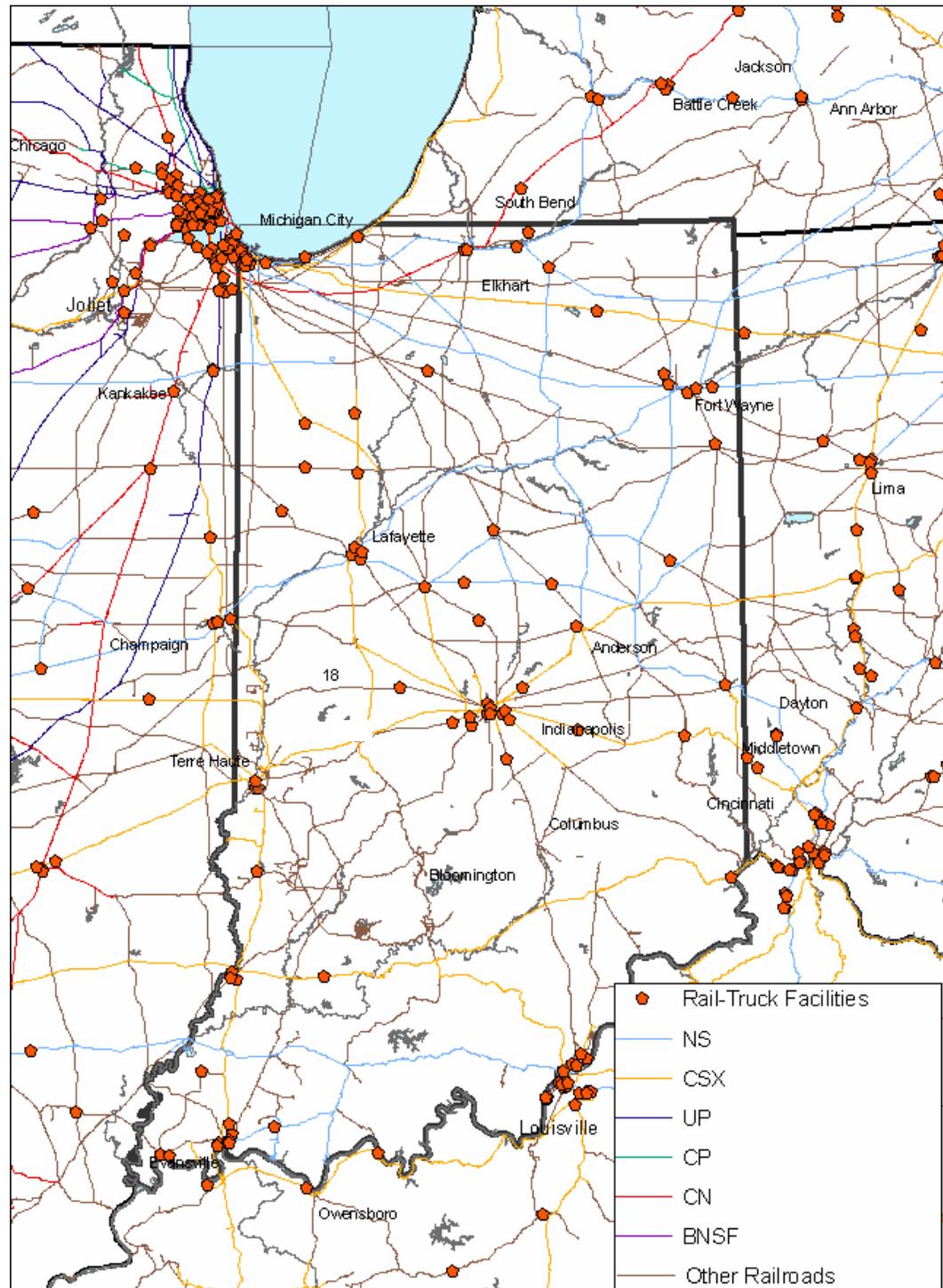
In Indiana, major Class I intermodal facilities include those operated by CSX in Evansville and Avon, and the NS Fort Wayne Triple Crown facility. The Roanoke General Motors facility and the Hoosier Lift in Remington are also considered rail/truck intermodal facilities of statewide significance.³⁴

Other trailer-on-flatcar or container-on-flatcar (TOFC/COFC) intermodal terminals, bulk transload facilities, and vehicle ramps connect truck shipments with Class I and short-line railroads throughout the State. As shown in Figure 5.4, the largest concentration of intermodal facilities outside Indiana affecting the state is located in greater Chicago where six Class I railroads operate facilities. New mega-facilities have recently been built outside Chicago, such as the CenterPoint intermodal facility in Elwood, Illinois served by BNSF, with others being planned. Freight shipped by rail from the West coast often is transloaded in the Chicago region and transported to Indiana via truck, which is faster than transferring cargo to a different rail carrier for the short trip to Indiana. Other large concentrations of truck-rail intermodal facilities that affect Indiana and are

³⁴Indiana DOT 2030 Long Range Transportation Plan.

used by shippers in the state include those in Cincinnati, Ohio (CSX and NS facilities) and Louisville, Kentucky (NS).

Figure 5.4 Major Rail/Truck Intermodal Facilities Affecting Indiana



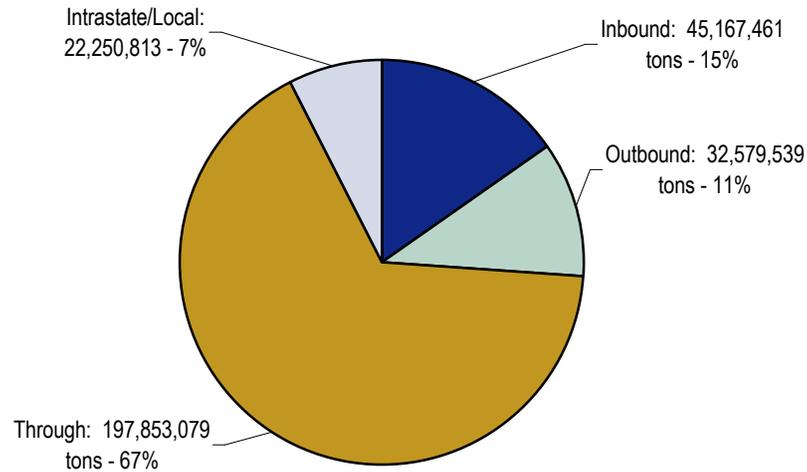
Major construction is underway on the “Heartland Corridor Project” to upgrade trackage between the Virginia ports and the new NS Rickenbacker Intermodal facility in Columbus, Ohio, allowing double-stacking of containers. The Rickenbacker facility will provide direct intermodal train service to and from Norfolk, Virginia and Chicago.

5.2 INDIANA 2005 CARLOAD WAYBILL SAMPLE ANALYSIS

In 2005, Indiana’s freight railroads moved nearly 298 million tons of freight. As shown in Figure 5.5, the 2005 freight rail tonnage by direction included over 45 million inbound tons, over 32 million outbound tons, and over 22 million local tons. However, the largest portion of rail tonnage in the State, nearly 198 million tons, was through traffic.³⁵ This large portion of through tonnage can be attributed to the relatively low number of intermodal facilities in Indiana and the State’s proximity to major rail hubs in Illinois.

³⁵The terminology used in this report refers to “inbound” as interstate traffic terminating in Indiana; “outbound” as interstate traffic originating in Indiana; “local” as Indiana intrastate traffic; and “through” as traffic neither originating nor terminating in Indiana, but passing through the State. “Origins” include both *outbound and local* flows, while “terminations” include both *inbound and local* flows.

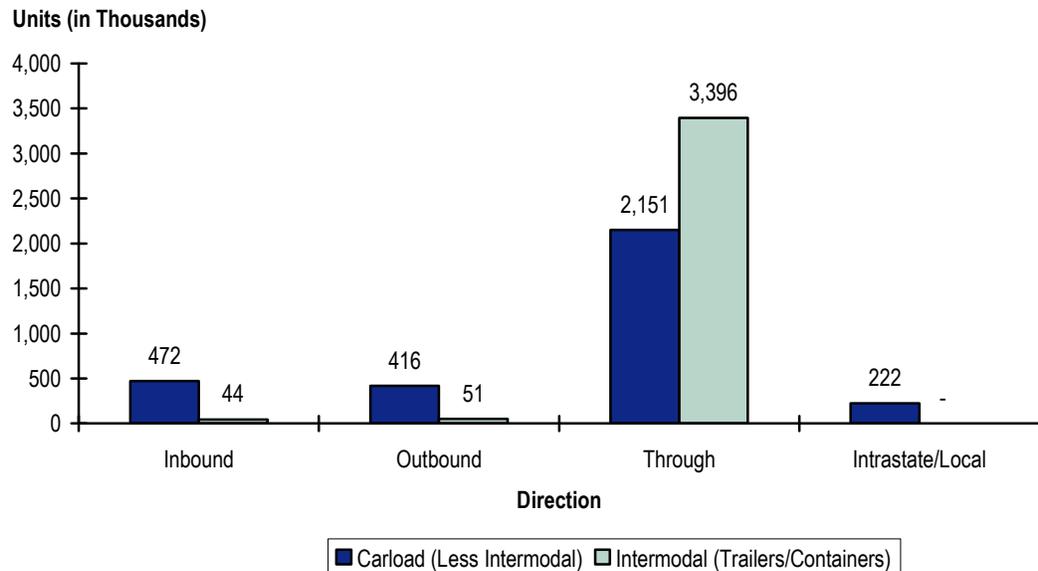
Figure 5.5 Indiana Freight Rail Tonnage by Direction
2005



Indiana's 2005 tonnage was carried by approximately 3,261,089 carloads and 3,490,460 intermodal units (trailers and containers),³⁶ each representing a nearly 50 percent share of the traffic. Figure 5.6 illustrates the share of carload versus intermodal freight rail movements by direction, including inbound, outbound, intrastate/local, and through movements. As shown, the vast majority of total carload and intermodal traffic moved, over 5.5 million units or 82 percent, was through movements. Again, this large portion of through units can be attributed to the small number of intermodal facilities in Indiana, and to the State's proximity to major intermodal facilities in the Greater Chicago area.

³⁶The carload total figures exclude cars that haul intermodal units.

Figure 5.6 Indiana Rail Carload and Intermodal Movements by Direction 2005



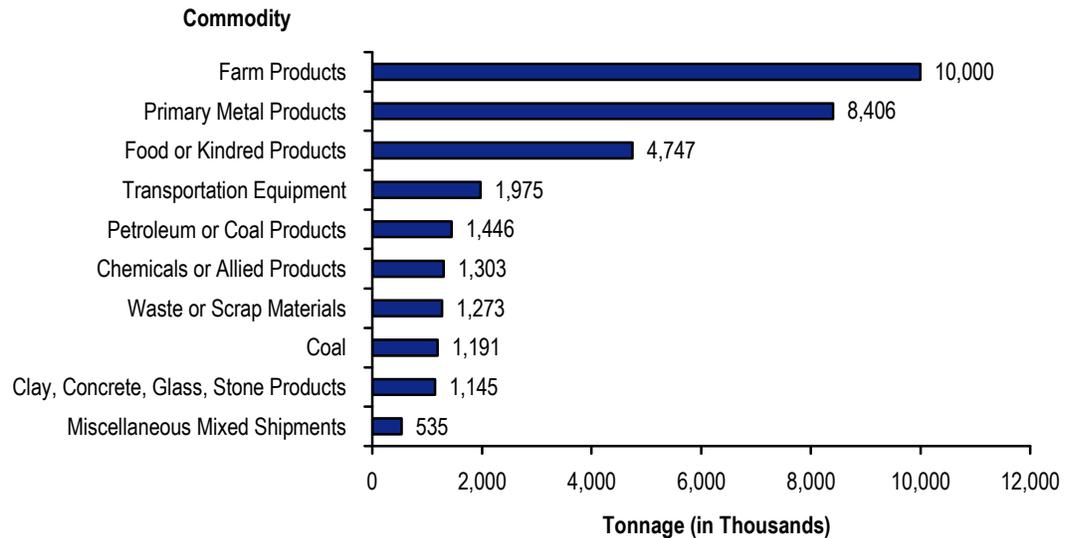
Accordingly, in 2005, the greatest share of carload movements was through movements, accounting for 66 percent of all carloads. Inbound carload moves comprised 14 percent, outbound moves accounted for 13 percent, and local moves less than 7 percent of total carload movements. Similarly, the greatest share of intermodal movements was through movements. Over 97 percent of intermodal movements were through movements, although it is important to note that many of the intermodal shipments that travel to and from Indiana are carried to the Chicago area by truck, at which point they are transferred to rail cars. Many of these shipments may then pass through Indiana on trains, and would be categorized as through movements at that point. Intermodal traffic traveling into or out of the state by rail each accounted for less than 2 percent of the total intermodal rail traffic. There were no local intermodal movements on record.

Outbound Rail Traffic by Commodity

The top 10 outbound commodities by tonnage on rail from Indiana account for 98 percent of the more than 32 million total outbound tons. The leading outbound commodity is farm products with nearly 10 million tons and 31 percent of the outbound share (Figure 5.7). The second highest outbound commodity is primary metal products with 8.4 million tons and 26 percent of the outbound share. These two commodities alone account for 57 percent of all outbound commodities. The remaining top 10 outbound commodities include food or kindred products (15 percent), transportation equipment (6 percent), petroleum or coal products (4 percent), chemicals or allied products (4 percent),

waste or scrap materials (4 percent), coal (4 percent), clay, concrete, glass, or stone products (4 percent), and miscellaneous mixed shipments (2 percent).

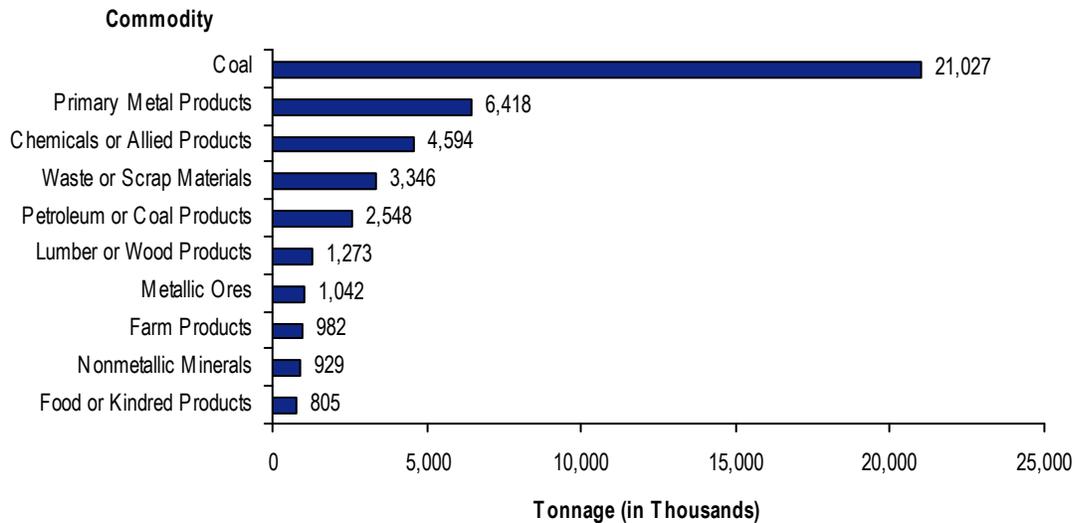
**Figure 5.7 Top 10 Outbound Indiana Commodities by Rail
2005**



Inbound Rail Traffic by Commodity

The top 10 inbound commodities by tonnage on rail into Indiana account for 95 percent of the total of over 45 million inbound tons. The leading inbound commodity is coal with over 21 million tons and 47 percent of the inbound share (Figure 5.8). The next highest inbound commodity, primary metal products, is a distant second with over six million tons and 14 percent of the inbound share. These two commodities alone account for 61 percent of all inbound commodities. The remaining top 10 inbound commodities include chemicals or allied products (10 percent), waste or scrap materials (7 percent), petroleum or coal products (6 percent), lumber or wood products (3 percent), metallic ores (2 percent), farm products (2 percent), nonmetallic minerals (2 percent), and food and kindred products (2 percent).

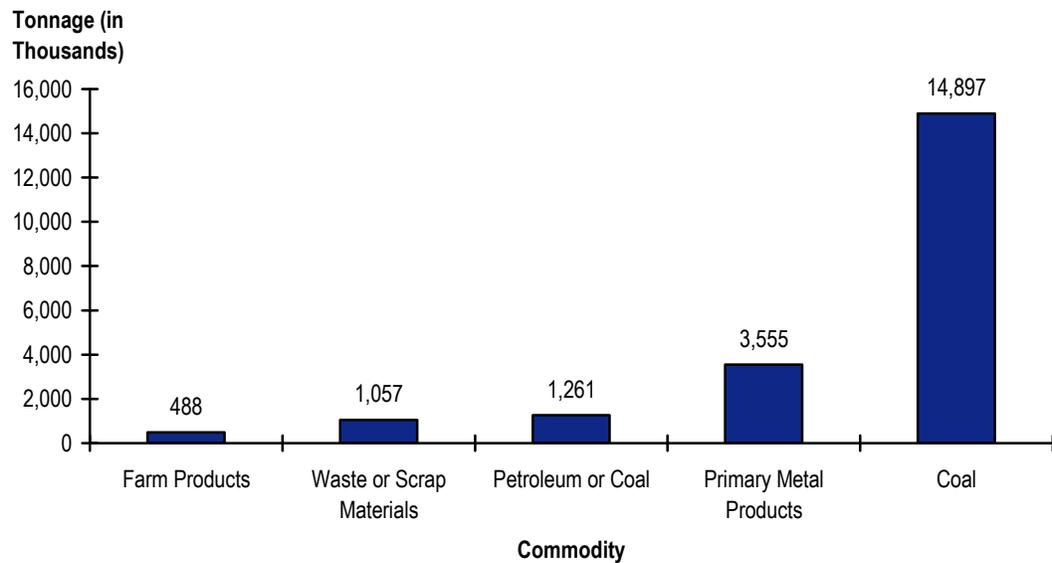
**Figure 5.8 Top 10 Inbound Indiana Commodities by Rail
2005**



Intrastate/Local Rail Traffic by Commodity

Over 7 percent of Indiana rail freight tonnage is attributed to intrastate/local movements, and the top five intrastate/local commodities by tonnage account for 96 percent of the total intrastate/local tons. Figure 5.9 depicts the share of these top five intrastate/local commodities. The leading intrastate/local commodity is coal with nearly 15 million tons and 67 percent of the intrastate/local share. The next highest intrastate/local commodity, primary metal products, is a distant second with 3.6 million tons and 16 percent of the intrastate/local share. These two commodities account for 83 percent of all intrastate/local commodities. The remaining top five intrastate/local commodities include petroleum or coal products (6 percent), waste or scrap materials (5 percent), and farm products (2 percent).

**Figure 5.9 Top 5 Intrastate/Local Indiana Commodities by Rail
2005**



Rail Traffic Origins by Indiana County

Figure 5.10 and Figure 5.11 depict the 2005 geographic distribution of the originating tonnage by each Indiana county, showing all traffic origins and intrastate traffic, respectively. As shown in Figure 5.10, both Gibson and Lake Counties lead all others with the most originating tonnage (greater than five million tons). Other counties that originated one million tons or more in 2005 included Vigo, Porter, Greene, Tippecanoe, Allen, Spencer, Marion, DeKalb, Knox, Montgomery and Cass.

Figure 5.11 depicts intrastate county traffic origins (trips that both originate and terminate in Indiana). Gibson County is the leader for intrastate originating tonnage (greater than four Million tons). Other counties that originated 500,000 tons or more in 2005 included Vigo, Lake, Greene, Knox, and Marion.

**Figure 5.10 Indiana Total Rail Traffic Origins by County
2005**

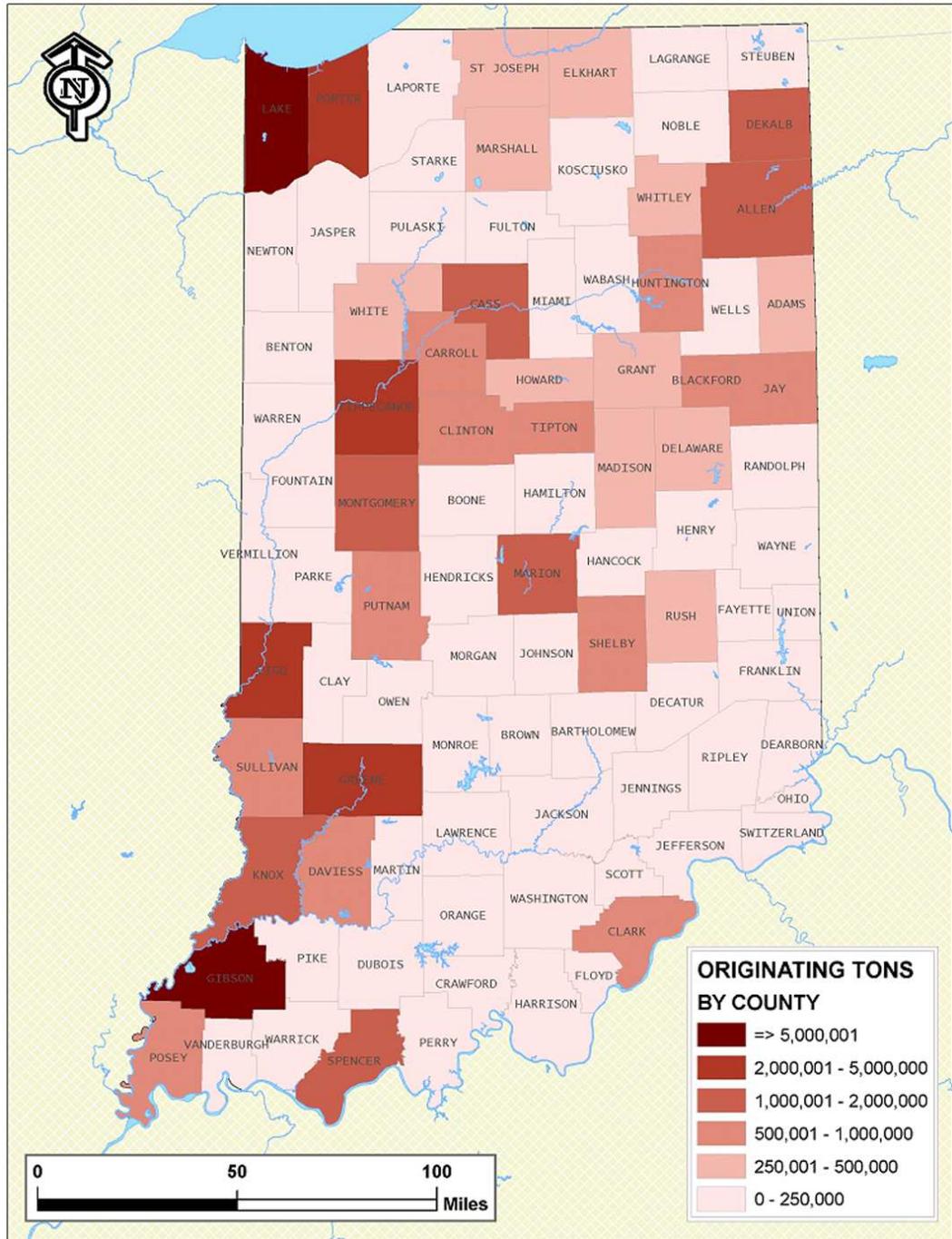
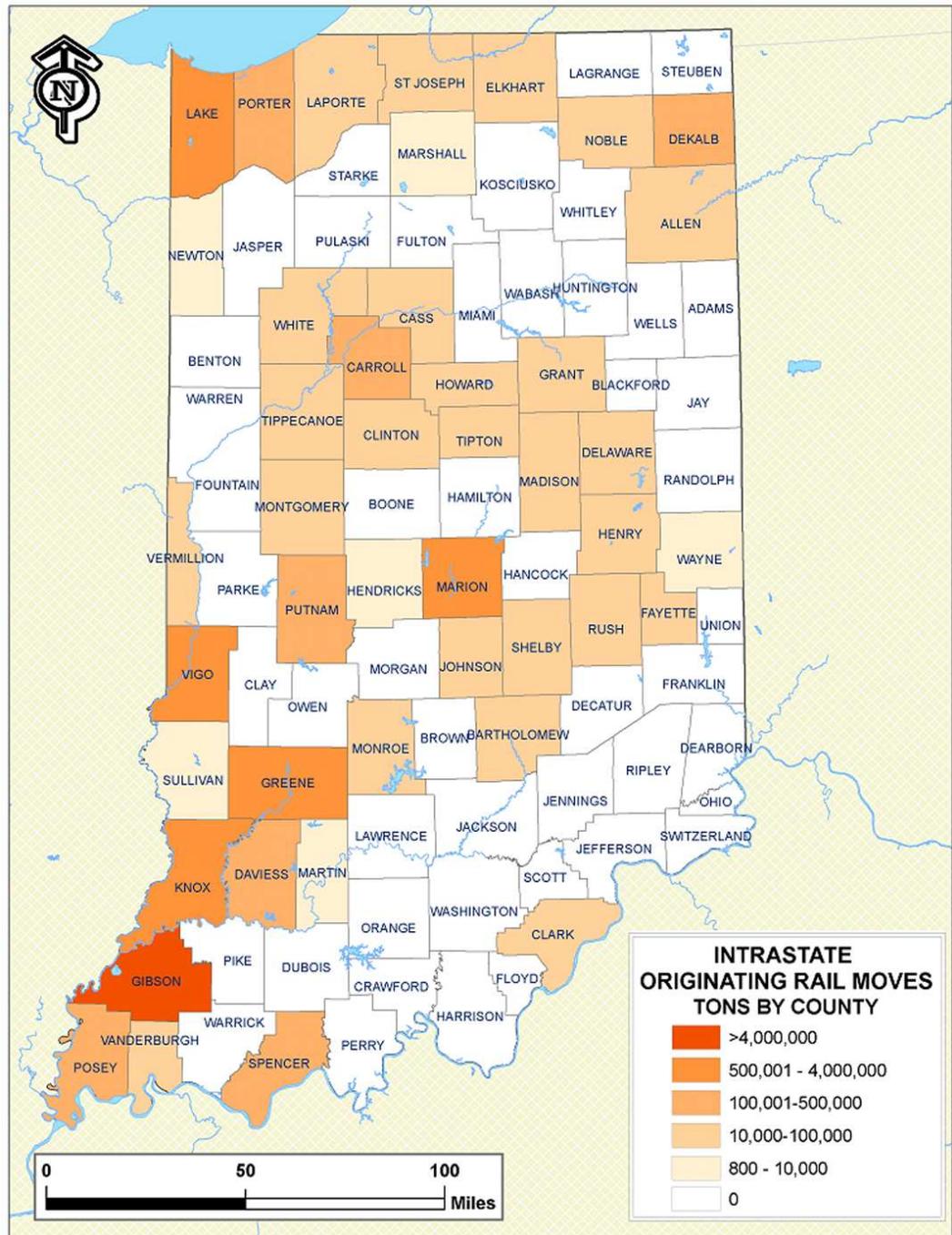


Figure 5.11 Indiana Intrastate Rail Traffic Origins by County
2005

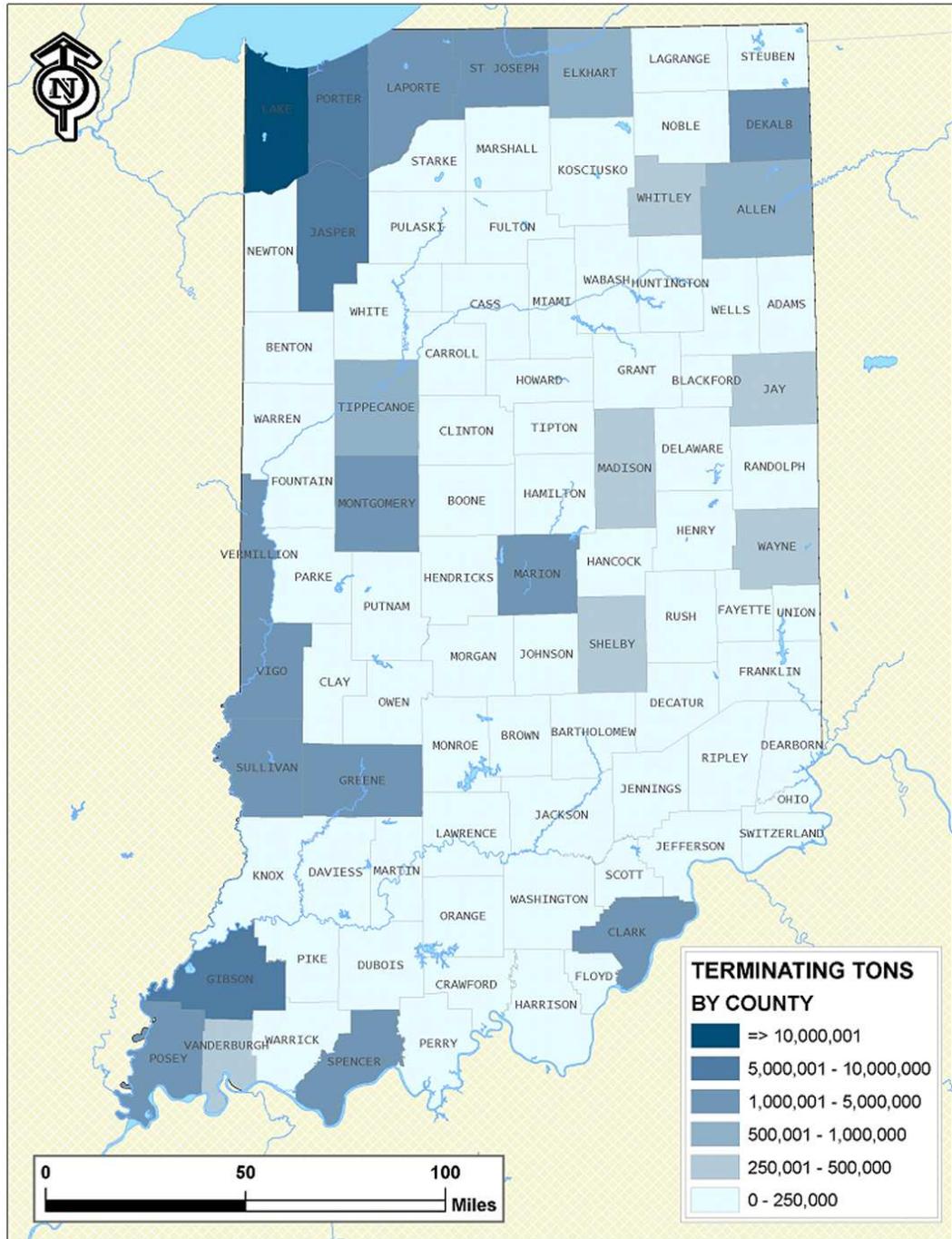


Rail Traffic Destinations by Indiana County

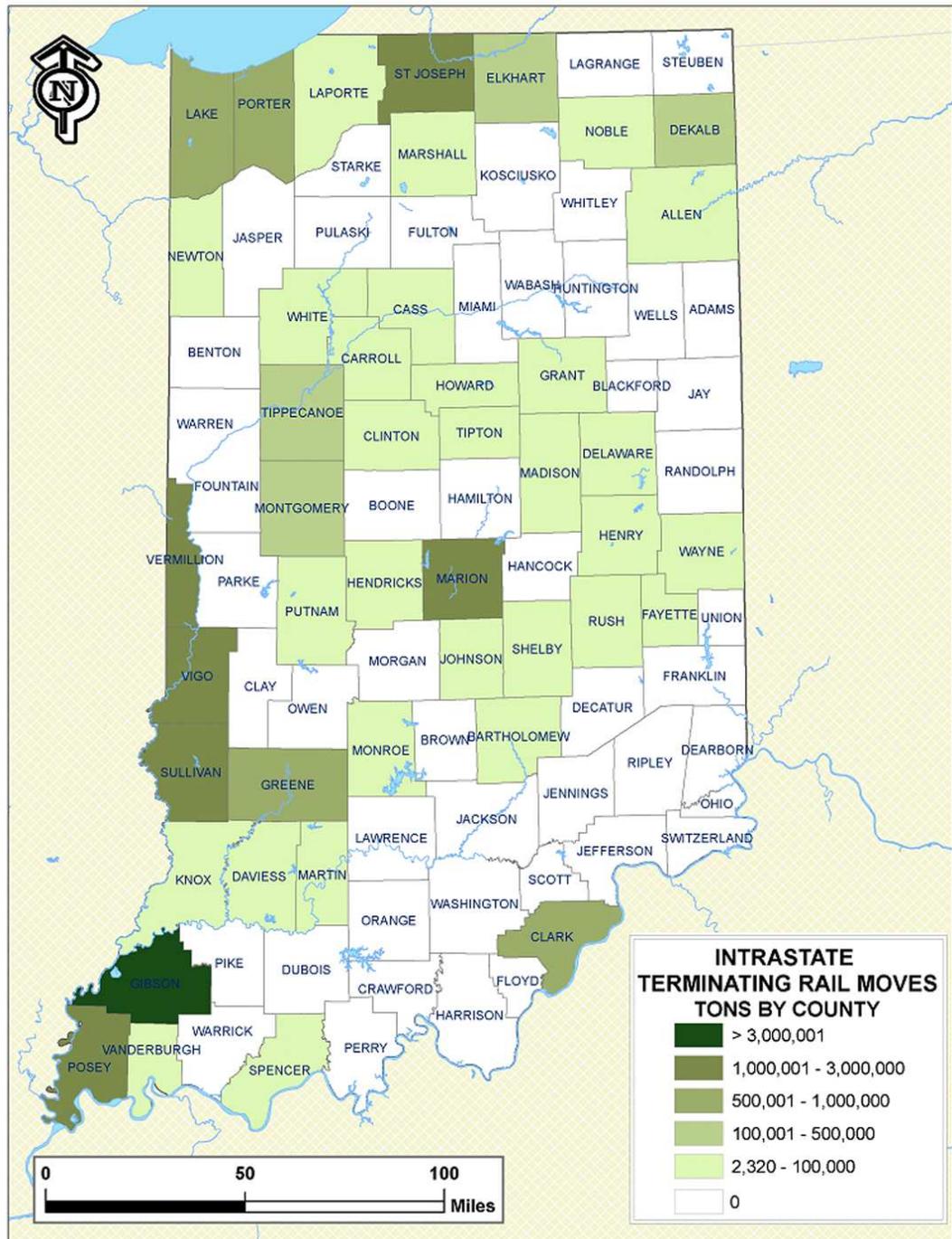
Figure 5.12 and Figure 5.13 depict the 2005 geographic distribution of the terminating tonnage by each Indiana county, showing all traffic destinations and intrastate traffic, respectively. As shown in Figure 5.12, both Lake and Gibson Counties lead all others with the most terminating tonnage (greater than 10 million tons). Other counties where one million tons or more were destined included: Porter, Jasper, Marion, Vigo, Posey, St. Joseph, DeKalb, Spencer, Vermillion, Montgomery, Sullivan, LaPorte, Greene, and Clark Counties.

Figure 5.13 depicts intrastate county traffic destinations (trips that both originate and terminate in Indiana). As shown, Gibson County is the leader for intrastate terminating tonnage (greater than three million tons). Gibson County is the site of a major coal power plant, requiring large amounts of coal shipped by rail, as well as a Toyota plant. Other counties that served as the destination for 500,000 tons or more in 2005 included Vigo, Vermillion, St. Joseph, Posey, Sullivan, Marion, Greene, Porter, Lake and Clark.

**Figure 5.12 Indiana Total Rail Traffic Terminations by County
2005**



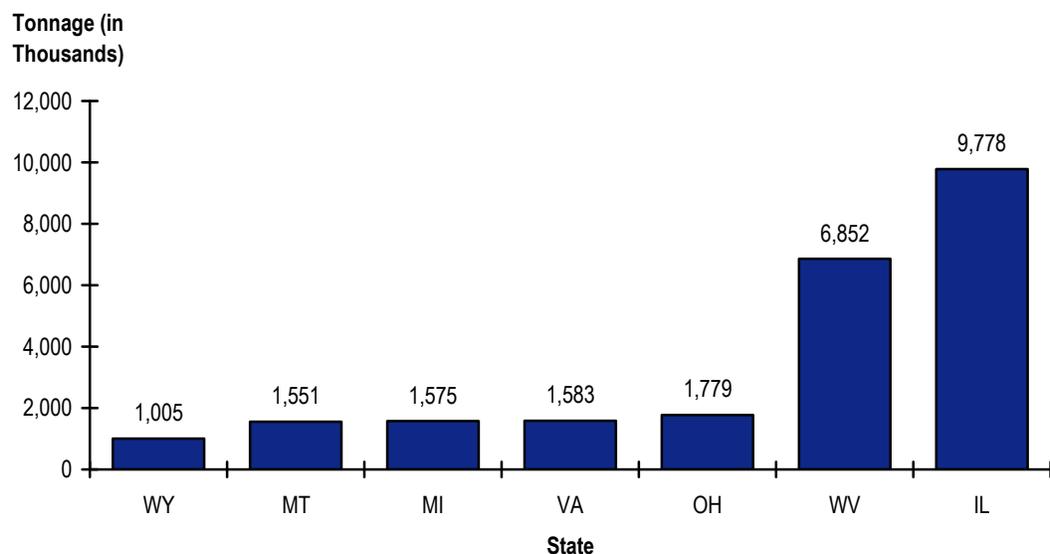
**Figure 5.13 Indiana Intrastate Rail Traffic Terminations by County
2005**



Inbound Rail Traffic by Trading Partner

Figure 5.14 shows the top origin states whose freight shipments to Indiana by rail exceeded one million tons in 2005. These states accounted for 48 percent of the total inbound tonnage that Indiana received in that year. Illinois ranked first with 9.8 million tons destined for Indiana, with coal (7.0 million tons), chemicals or allied products (611,000 tons), and farm products (555,000 tons) as its top three commodities. Many of these products likely were not produced or mined in Illinois. However, Chicago is the nation's major east-west rail hub, with coal and other products from the west being shipped to Chicago, transferred to other railways' trains, and continuing on to end their journey in Indiana. The Waybill dataset reports the first leg of the trip as having a destination in Illinois, and the final leg is reported separately as having an Illinois origin and Indiana destination. The dataset does not link the two segments.

**Figure 5.14 Inbound Indiana Rail Tonnage by Origin State
2005**



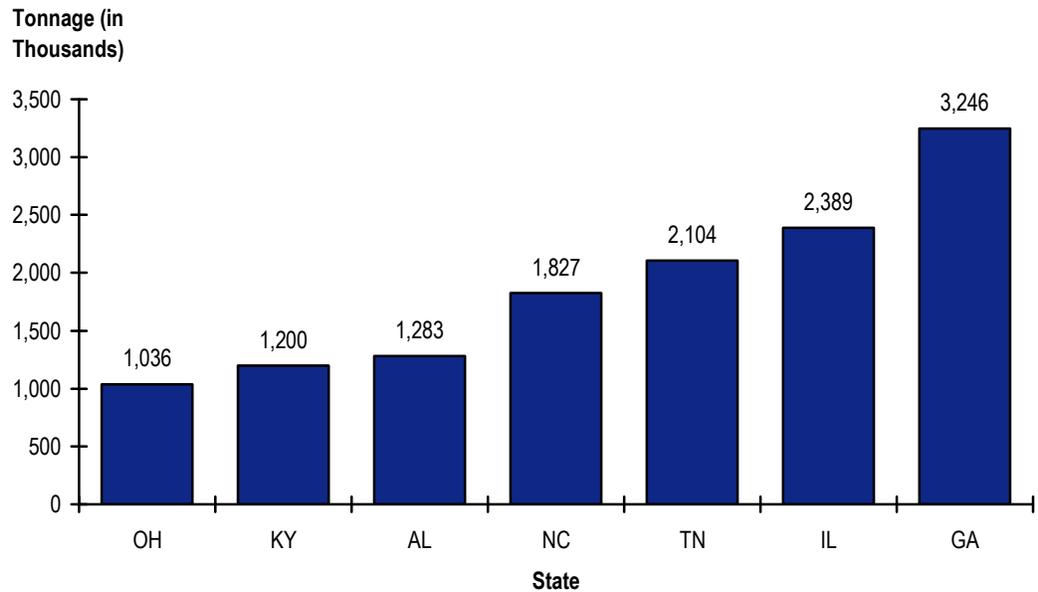
West Virginia ranked second with a total of 6.9 million tons shipped to Indiana, with coal accounting for 98 percent of the shipments. Next highest was Ohio with 1.8 million tons, comprised of coal (550,000 tons), primary metal products (292,000 tons), and waste or scrap materials (273 tons). The remaining five States - Ohio, Virginia, Michigan, Montana, and Wyoming - shipped between 1.0 million and 1.8 million tons each to Indiana.

Outbound Rail Traffic by Trading Partner

Figure 5.15 shows the top receiving states for Indiana's outbound rail traffic which exceeded one million tons in 2005. These states accounted for 34 percent

of the total outbound tonnage in that year. Georgia and Illinois were Indiana’s top receiving states with 3.2 and 2.4 million tons, respectively. Georgia’s top shipment, coal (2.8 million tons), accounted for 85 percent of terminating rail tonnage from Indiana; food and kindred products was second (244,000 tons).

Figure 5.15 Outbound Indiana Rail Tonnage by Termination State

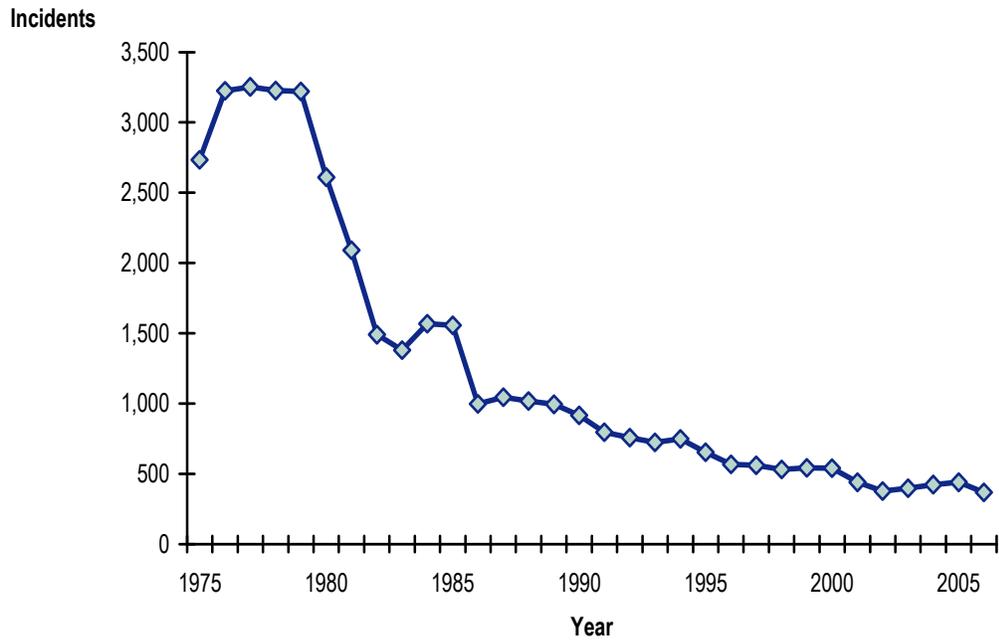


The top three shipments to Illinois included coal (1.2 million tons), primary metal products (423,000 tons), and food or kindred products (319,000 tons). Similar to inbound shipments, it’s likely that many of these products were transferred to different trains in Chicago and continued their journey elsewhere in the country. Tennessee received 2.1 million tons with top three shipments of coal (1.5 million tons), food and kindred products (224,000 tons), and primary metal products (155,000 tons). The remaining four States –North Carolina, Alabama, Kentucky, and Ohio – each received between 1.0 million and 1.8 million tons from Indiana.

5.3 RAIL-RELATED ACCIDENTS AND INCIDENTS

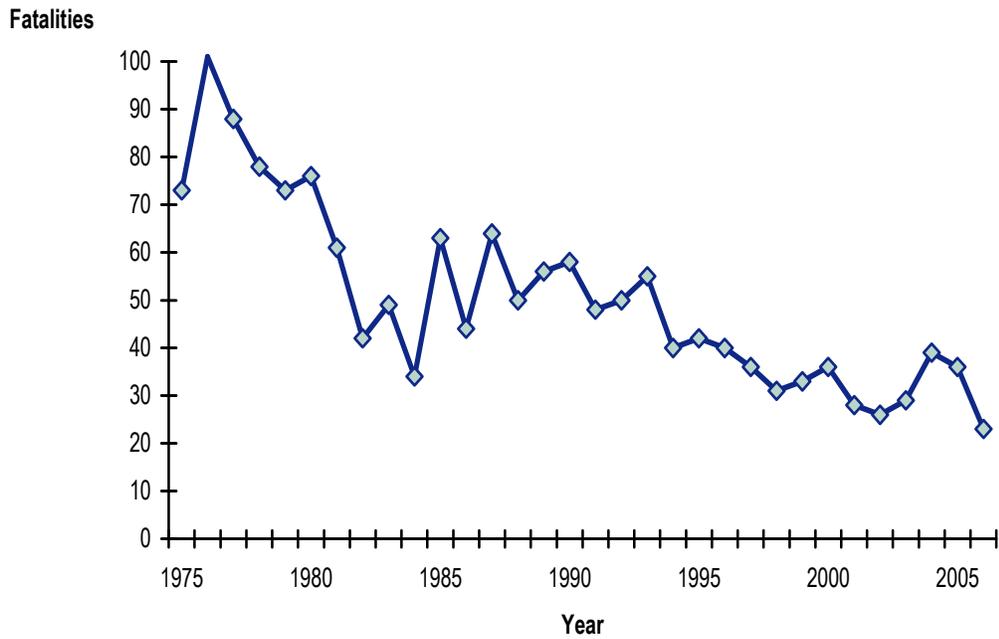
The Federal Railroad Administration (FRA) maintains records of all railroad-related accidents and incidents. In 2006 there were 368 such incidents in Indiana, down from 439 in 2005 and the lowest number since at least 1975 (the first year for which FRA data were available). There were 23 total fatalities resulting from those incidents, down from 36 in 2005 and also the lowest since 1975. Figure 5.16 and Figure 5.17 show the trends in rail-related incidents and fatalities in Indiana since 1975.

Figure 5.16 Rail-Related Incidents in Indiana
1975 to 2006



Source: Federal Railroad Administration, Office of Safety Analysis

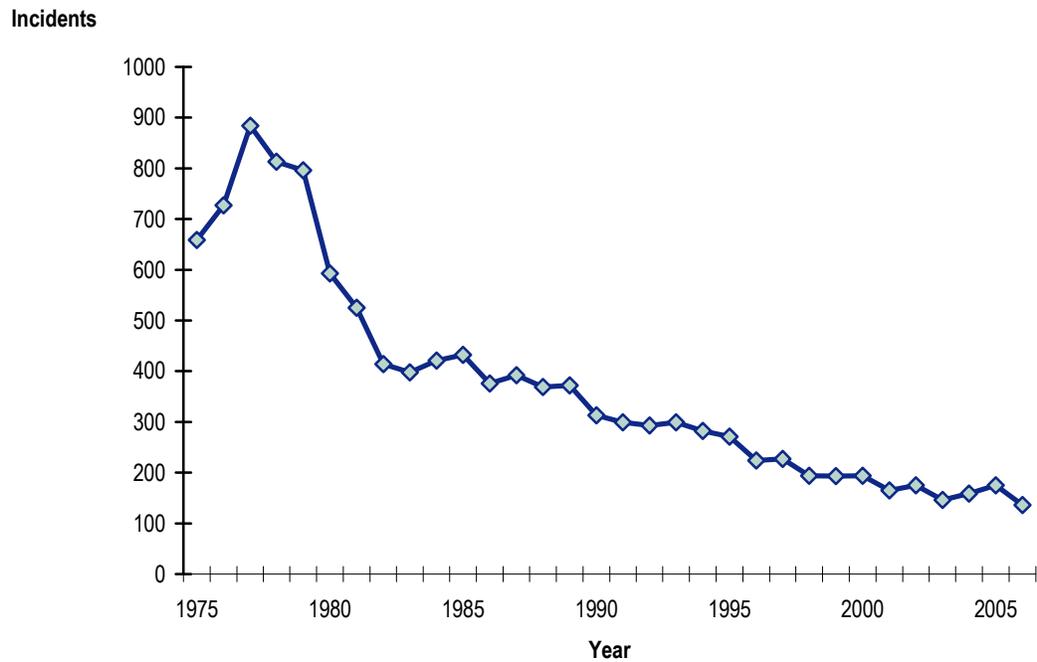
Figure 5.17 Fatalities Resulting from Indiana Rail Incidents
1975 to 2006



Source: Federal Railroad Administration, Office of Safety Analysis

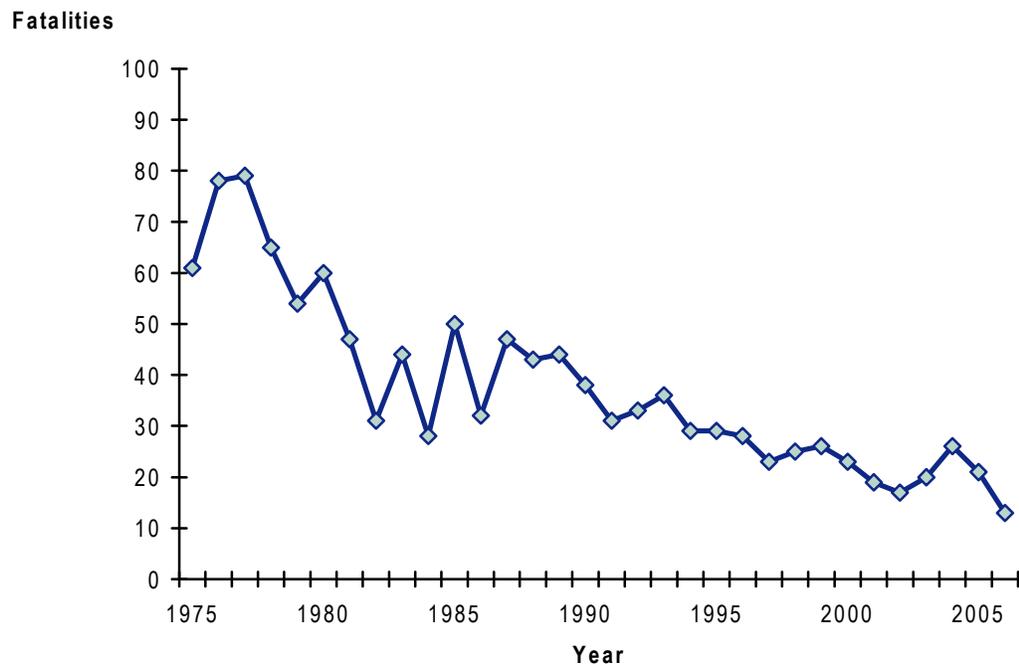
While the preceding two figures include highway-rail grade crossing incidents (including collisions) in addition to all other rail-related incidents, FRA also maintains a separate database that isolates only those at highway-rail grade crossings. In 2006 there were 136 such incidents in Indiana, down from 175 in 2005 and the lowest number since at least 1975. There were 13 total fatalities resulting from highway-rail grade crossing incidents in 2006, down from 21 in 2005 and also the lowest since 1975. Of the 12 fatal highway-rail grade crossing collisions in 2006, all but two occurred at crossings that did not have active warning devices. Figure 5.18 and Figure 5.19 show the trends in incidents and fatalities at highway grade crossings in Indiana since 1975.

**Figure 5.18 Incidents at Indiana Highway-Rail Grade Crossings
1975 to 2006**



Source: Federal Railroad Administration, Office of Safety Analysis

Figure 5.19 Fatalities Resulting from Highway-Rail Grade Crossing Collisions in Indiana
1975 to 2006



Source: Federal Railroad Administration, Office of Safety Analysis

5.4 RAIL SYSTEM PERFORMANCE SUMMARY

Due to recent increases in tonnage moved by rail, excess capacity in the national rail network is quickly being consumed. In 2007, few rail segments were considered to be near or at capacity (Figure 5.20). Rail lines converging on the Chicago area in Northwest Indiana were at capacity, though the recent merger of the CN and EJ&E could help to relieve some portion of this bottleneck. The CSX line in Evansville and the NS line leaving the state into Champaign, Illinois, were approaching capacity. In 2035, however, assuming no new major added capacity or changes after 2007, most of Indiana's major interstate rail lines are expected to be operating at or above capacity.

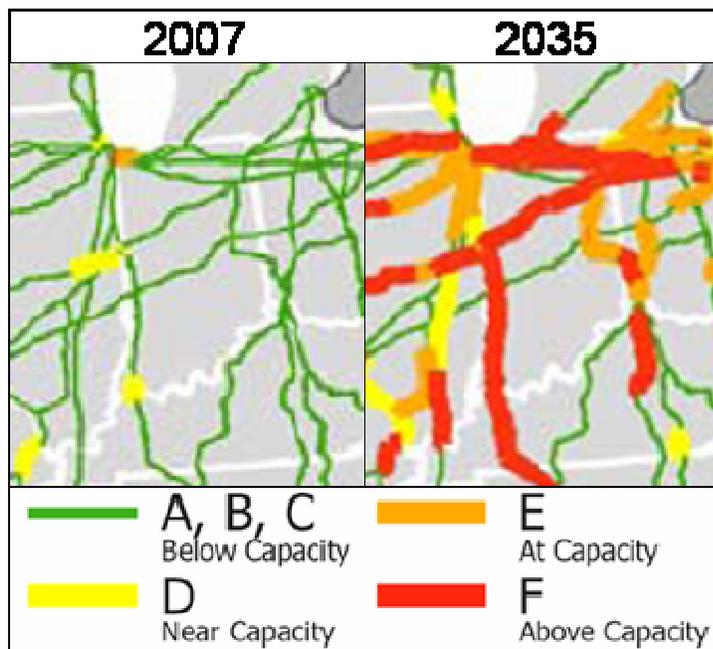
Access to major rail yards and rail/truck intermodal facilities is critical for the viability of intermodal transport in Indiana. Highway access roads to the NS Triple Crown facility in Fort Wayne and the Avon CSX facility in Indianapolis were designated as National Highway System (NHS) intermodal freight

connectors of national significance.³⁷ Access roads to the Triple Crown facility, including Pontiac Street and Wayne Trace, are currently operating at LOS A and B, with similar conditions predicted in 2030, according to output from the ISTD. U.S. 36, however, which connects the Avon CSX facility with I-465/I-74 in Indianapolis, is operating between LOS B and F along different segments, with slightly more congested segments expected in 2030.

The Roanoke General Motors facility, an intermodal rail/truck facility of statewide significance, can be accessed by Lower Huntington Road and Lafayette Center Road. These roads are operating between LOS A and B and are expected to have similar conditions in the future, while nearby I-69 will experience more congested conditions in the future at LOS C. U.S. 24/U.S. 231 connects the Hoosier Lift in Remington to nearby I-65 and is currently operating at LOS C. In 2030 both U.S. 24/U.S. 231 and I-65 are expected to function at LOS C.

Rail-related safety performance continues to improve. The trends in the “Rail-Related Accidents and Incidents” section indicate a steady and continuing decrease in all rail-related incidents and fatalities in Indiana.

Figure 5.20 Indiana Rail Network Level of Service (2007 and 2035)



Source: *National Rail Freight Infrastructure Capacity and Investment Study*, prepared for Association of American Railroads, Cambridge Systematics, September 2007.

³⁷NHS Intermodal Freight Connectors: Report to Congress, U.S. DOT, 2000.

5.5 PLANNED INFRASTRUCTURE INVESTMENTS

INDOT administers the Industrial Rail Service Fund, which provides grants for freight rail infrastructure improvement projects to Class II and III railroads and Port Authorities to maintain and increase rail shipping levels. During FY 2007, grants totaling \$1.9 million were awarded. In FY 2008, \$1.3 million was awarded (in grants of up to \$350,000 each) to six shortline railroads that will be making improvements:

- Louisville and Indiana Railroad (Johnson County);
- Indiana Railroad company (Vigo County);
- Hoosier Southern Railroad (Perry County);
- Chesapeake and Indiana (Starke County);
- Winamac Southern (Howard County); and
- Bee Line Railroad (Warren and Benton Counties).

As part of CN's purchase of the EJ&E, it has proposed \$100 million in improvements including three new rail connections in Indiana at Griffith, Ivanhoe and Kirk Yard in Gary.³⁸ CN proposes to relocate rail car sorting and train development activities to Kirk Yard and add three inbound and three outbound switch trains. An Environmental Impact Statement (EIS) was recently completed.

Two rail improvement projects were included in the Northwest Indiana Regional Planning Commission's (NIRPC) FY 2008 to 2011 TIP: relocation of freight rail lines in the vicinity of the Gary/Chicago Airport for eventual runway extension, and the Rail Traffic Relocation Project in Gary.

The Northeastern Indiana Regional Coordinating Council (NIRCC) lists the following rail improvements in its financially constrained 2030 Transportation Plan:

- Railroad grade separation of Anthony Boulevard and NS line;
- Railroad grade separation of Airport Expressway and NS line;
- Railroad grade separation of Baer Field Thruway and NS line;
- Reconstruction of railroad grade separation at Anthony Boulevard and CSX line; and
- Reconstruction of railroad grade separation at U.S. 27/Lafayette Street and NS/CSX lines.

According to the Michiana Area Council of Governments (MACOG) FY 2008-2012 TIP, in Elkhart a grade separation project at Prairie Avenue and Norfolk

³⁸Federal Register, April 28, 2008, Pages 22,994-23,003.

Southern Railroad is planned, and improvements to rail-highway grade crossings will be made.

Indiana has more than 6,000 public rail-highway crossings, which is the fifth highest in the nation, according to INDOT. As shown in Table 5.2, more than half of the rail crossings in Indiana have active warning devices, which is higher than the national average. Federal Rail-Highway Crossing Program (Section 130) funding enables safety improvements at approximately 30 to 35 Indiana crossings per year.

Table 5.2 Indiana Highway-Rail Grade Crossing Inventory

| Warning Devices | Number | Percent of Total |
|----------------------------|--------|------------------|
| Flashing Lights and Gates | 1,794 | 29.7 |
| Flashing Lights Only | 1,366 | 22.6 |
| Other | 168 | 2.8 |
| Stop Signs Plus Crossbucks | 982 | 16.3 |

Source: <http://www.in.gov/indot/7103.htm>.

6.0 Rail Policies

Improving the freight transportation system is often not just a matter of direct investment in specific infrastructure but can be accomplished through understanding and addressing policy issues. These issues include organizational structures, planning and prioritization processes, funding mechanisms, laws and regulations, and inter-organizational communication, among others. Understanding the key institutional issues in Indiana will help in the recommendation of tools, methods, and strategies for integrating freight within Indiana's transportation planning and programming process.

The sections that follow present the existing structures and policies and recent and ongoing mandates that affect freight movement in the State of Indiana. These items highlight the evolving role of the public sector in planning, financing, and implementing freight improvement projects both in Indiana and across the nation.

6.1 ORGANIZATION AND PROCESSES FOR FREIGHT PLANNING

INDOT Organization and Roles

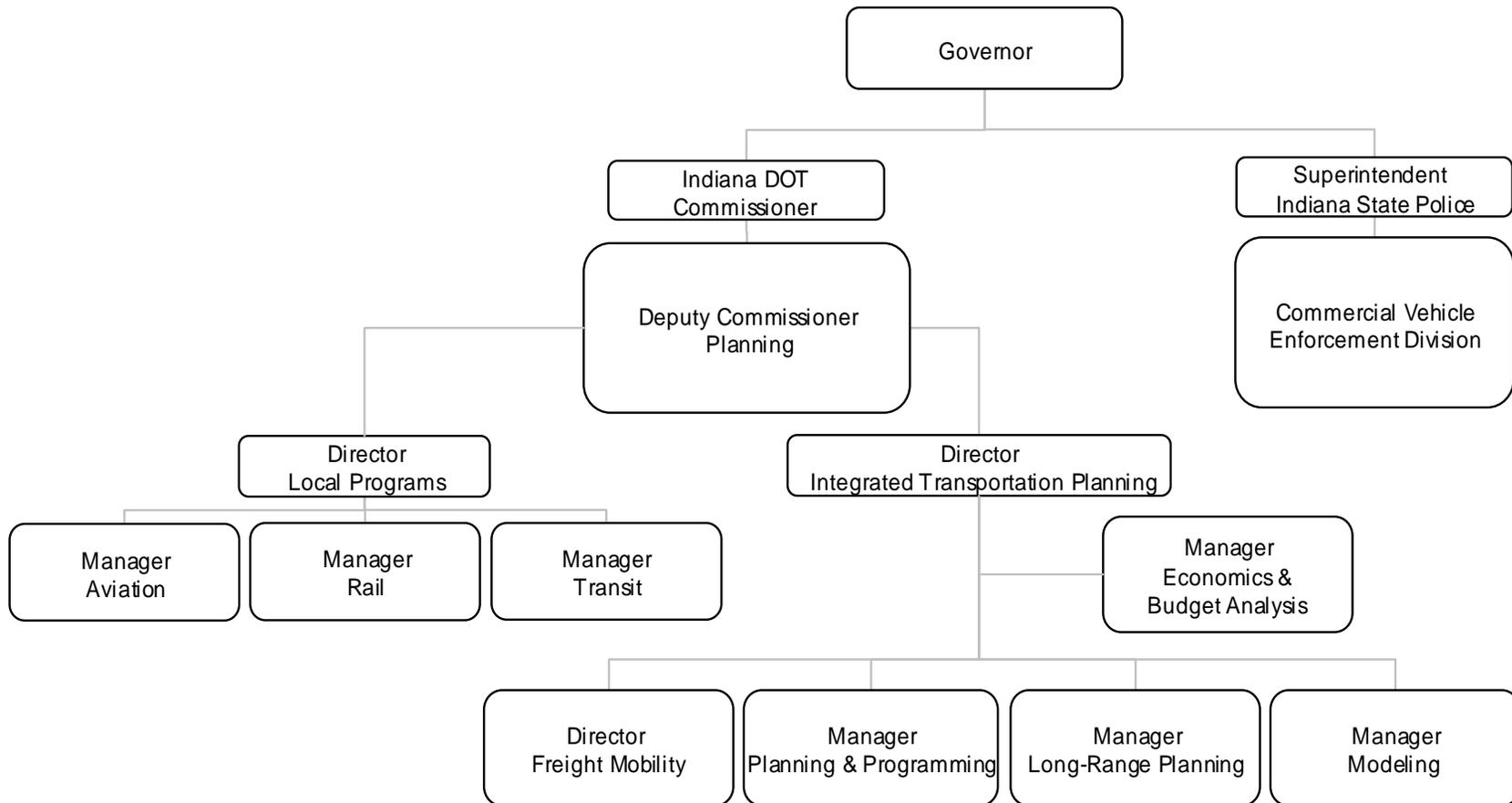
The Indiana Department of Transportation (INDOT) established the Office of Freight Mobility in late 2006. While the Office of Freight Mobility staff of one is small given the amount of work Indiana is pursuing, efforts are supported by long-range planning, modeling, and economics offices, as shown in Figure 6.1.

Information on freight issues is communicated with other divisions through regular interaction with roadway administrators, local funding offices, public affairs, and operations. The Office of Freight Mobility also interacts with the State's air and rail modal offices. The four staff in the Rail Office monitor rail safety and maintain state rail maps and other data. Federal and state rail crossing safety improvement funding programs are administered by the Office of Roadway Safety. The Office of Aviation's seven staff are involved in the functions of airport certification, construction project coordination, airport master planning, engineering, and grant administration.

The Office of Freight Mobility, which formerly was associated with operations, maintains contact with this function through communications with the Operations Support Division. The Office of Freight Mobility also provides regular updates to upper management on progress. Enforcement of freight-related issues such as truck size and weight, hazardous materials, and safety is managed by the Indiana State Police.

As Indiana has recently made great strides with funding its transportation program through the Major Moves Program, more projects that impact goods movement have the active involvement of the Office of Freight Mobility, including those that are not traditionally considered “freight projects.”

Figure 6.1 INDOT Freight Responsibilities



INDOT Freight-Related Planning

Recent and ongoing freight planning activities conducted by INDOT include:

- *Transport Flows in the State of Indiana: Commodity Database Development and Traffic Assignment (1997)* – This study was undertaken to create a database of commodity flows into and out of Indiana counties and to allocate this commodity traffic to the State’s transportation network.
- *Intermodal Management System Study (1997)* – This study focused on developing transportation improvements to link intermodal facilities to Indiana’s portion of the National Highway System. The study identified 41 intermodal facilities of national or statewide significance, evaluated and prioritized deficiencies and developed actions and strategies to improve the overall performance of Indiana’s transportation system.
- *Indiana Rail Plan (2002)* – This study detailed the importance of the State’s rail freight system to Indiana’s economy and the need to capitalize on the benefits while addressing the challenges associated with the State’s rail industry.
- *INDOT Market Research Project, Perspective on Freight Stakeholders (2004)* – This research identified concerns of major shippers and carriers for consideration in the statewide planning process, and provided initial recommendations to INDOT regarding the integration of freight and goods mobility issues in the statewide plan.
- *Freight Flows of Indiana (2006)* – This update to the 1997 *Transport Flows in the State of Indiana* study used commodity flow survey data to create a model for estimating the production and attraction of freight flows in Indiana for 2015 and 2025.
- *Freight Component of the Indiana Statewide Travel Demand Model (ISTDM)* – Using *Freight Flows of Indiana* data, supplemented by other data, this component of the ISTDM estimates origin-destination truck flows by commodity for current and forecast years and assigns these trucks to the highway network.
- *INDOT 2030 Long-Range Transportation Plan (2007 Update)* – This plan identifies transportation projects needed through 2030.
- *Indiana Multimodal Freight and Mobility Plan* – This project, completed in May 2009, uses the ISTDM, other available data, and stakeholder input to perform a comprehensive analysis of the current and future freight transportation system in Indiana. It identifies gaps and needs, proposes solutions, provides a methodology for evaluation of freight projects, and establishes an implementation plan. This project also includes this Rail Plan as a final product.
- *I-70 Dedicated Truck Lanes Study (starting June 2009)* – U.S. DOT selected this project, led by Indiana, as one of six “Corridors of the Future” for further study.

This multistate study covers nearly 800 miles and involves participation by Ohio, Indiana, Illinois, and Missouri. This project is discussed in further detail below.

The future of freight planning in Indiana will rely on coordination with transportation counterparts in neighboring states. Accordingly, Indiana is leading or partnering several ongoing projects. Multistate projects include the I-70 Dedicated Truck Lanes study mentioned above; Illiana Expressway Feasibility Study with Illinois; I-69 Corridor of the Future project from Texas to Michigan; Ohio River Bridges (I-65 and I-265) between Louisville, Kentucky and Jeffersonville, Indiana; and U.S. 24 “Fort to Port” with Ohio.

Indiana also is active in the Mississippi Valley Freight Coalition, a research-oriented group of 10 states in the northern Mississippi Valley, which cooperates in the planning, operation, preservation, and improvement of transportation infrastructure in the region, including interstate corridors, rail infrastructure, and inland and Great Lakes waterways. Similarly, Indiana is active in AASHTO’s Mississippi Valley Conference, which has a broader transportation focus but includes freight.

Metropolitan Planning Organization Roles

Within Indiana, 14 metropolitan planning organizations (MPOs) conduct regional transportation planning. The Indiana MPO Council, comprised of Indiana MPOs, meets monthly to discuss common planning issues, including freight. INDOT has a seat at the table during these discussions and ensures MPOs have a voice in state freight planning efforts. The statewide MPO community is beginning to increase its emphasis on freight, as indicated by their focus on freight at the 2008 Indiana Statewide MPO Conference. In addition, the Council has provided freight-related technical training on planning issues, and there are plans to establish a Freight Subcommittee of the MPO Council in the near future.

As part of this Indiana Multimodal Freight and Mobility Plan, extensive outreach was conducted with non-INDOT transportation stakeholders, including the MPOs. Eleven of Indiana’s MPOs were interviewed as part of this process.

The majority of Indiana MPOs do not have a designated freight planner. For those agencies that do have a staff member working consistently on freight, that person generally works less than full time on the issue. Some agencies noted that relatively few freight issues exist in their region, which results in less freight planning emphasis. Others such as the Indianapolis MPO are located in areas that handle significant freight movement but do not have sufficient staff resources to dedicate time to freight. According to a 2003 Association of Metropolitan Planning Organizations (AMPO) survey of MPOs nationwide with a mean staff size of 15 and median staff size of 6, 22 percent of responding organizations had 1 or more staff persons dedicated to freight.

MPOs are split on directly addressing freight in their planning work products. Of the Indiana MPOs interviewed, five specifically addressed freight in their most recent long-range transportation plans (LRTPs) or Transportation Improvement Plans (TIPs). Of the five directly addressing freight, only one included freight projects in its TIP: the Michiana Council of Governments (MACOG).

Most Indiana MPOs do not have an active freight advisory committee, with the exception of MACOG and the Ohio-Kentucky-Indiana Regional Council of Governments (OKI). In some cases, the freight advisory committee role is handled by an outside organization. The Northwest Indiana Regional Planning Commission (NIRPC) noted that the Northwest Indiana Forum took over the freight advisory council role partly because the MPO faced the challenge that many freight-related issues could not be discussed in a public forum. The Northeastern Indiana Regional Coordinating Council (NIRCC) noted that while it does not have a dedicated freight advisory committee, the Chamber of Commerce facilitates a group that includes shippers and carriers. According to the AMPO survey, nationally 18 percent of MPOs have an institutionalized freight advisory committee.

Private-Sector and Advocacy Group Involvement

A number of groups have recently become increasingly active in promoting the economic benefits of the logistics industry and improved freight mobility in the State of Indiana.

Central Indiana Corporate Partnership

The Central Indiana Corporate Partnership (CICP) was created in 1999, with membership, including the largest manufacturers and university leaders in central Indiana. CICP provides input on economic policy, undertakes research activities, and develops strategies for corporate retention and attraction. It has undertaken several targeted initiatives such as BioCrossroads focusing on the life sciences industry and TechPoint to grow the technology sector.

In June 2007, CICP launched the Conexus Indiana initiative to support advanced manufacturing and logistics in the State. The 11 board members of Conexus Indiana include corporate executives, logistics company owners, and leaders in manufacturing and education. One of the primary efforts underway by Conexus Indiana is workforce development in logistics and advanced manufacturing, in partnership with Indiana universities and community colleges. According to Conexus, nine of the top 11 statewide skill shortages in Indiana are in transportation, distribution, logistics, and manufacturing. The initiative hopes to build awareness of and interest in the well-paid and highly technical logistics and manufacturing jobs in the State. Additionally, Conexus Indiana seeks to enhance research and supplier networks for these industries.

Conexus also participates in the Indiana Logistics Council. The Council is a partnership between corporate executives and relevant state agencies, including

INDOT, the Indiana Economic Development Corporation, and the Ports of Indiana. The Council convenes regularly to address infrastructure priorities, public policy, and other issues supporting the common vision of moving freight in Indiana. The Indiana Logistics Council has formed three subcommittees focusing on the issues of workforce development, awareness, and infrastructure.

Purdue University NEXTRANS

Purdue University's U.S. DOT Level V Regional University Transportation Center established NEXTRANS in August 2007 as a consortium of educational institutions in Illinois, Michigan, Ohio, and Wisconsin; public sector partners such as state DOTs and FHWA regional offices; and corporate members, including Association of American Railroads, Motorola, Navteq, and Honda. NEXTRANS is funded with \$13 million over three years from U.S. DOT and consortium partners. The focus of NEXTRANS is on intermodal freight transportation and logistics to address regional needs and economic opportunities. The group held its inaugural summit, *Exploring Partnerships for Innovative Transportation and Logistics Solutions*, in May 2008 with participation by INDOT, IEDC, business leaders, and educational partners.

Northwest Indiana Forum

The Northwest Indiana Forum is a nonprofit regional economic development organization serving Lake, Porter, and LaPorte counties. The organization's mission is to enhance economic opportunities in Northwest Indiana by providing services to promote the creation and retention of quality jobs. Northwest Indiana Forum provides assistance, customized analysis and research, marketing programs, and legislative support to existing and potential businesses and industries.

Ports of Indiana

The Ports of Indiana is a quasi-governmental organization that operates a state-wide system of ports, foreign trade zones, and economic development programs under the authority of the Indiana Port Commission, a seven-member bipartisan board appointed by the Governor. Indiana has three water ports: Burns Harbor in Portage, Port of Indiana - Mount Vernon, and Port of Indiana Jeffersonville.

For the past five years, the Ports of Indiana and Purdue University have convened a two-day logistics summit that draws between 400 and 500 leaders from industry, academia, public policy, and government to discuss securing Indiana's place in the supply chain. The Ports of Indiana maintains a web site promoting Indiana logistics (<http://www.indianalogistics.com/>) where it publishes the free annual *Indiana Logistics Directory*. The directory promotes Indiana's logistics assets, includes feature articles from major carriers and shippers and INDOT's Freight Office, lists logistics-oriented freight education programs, and provides a listing of carriers and freight facilities in the State.

Four Cities Consortium

The Four Cities Consortium was a coalition comprised of the municipalities of East Chicago, Gary, Hammond, and Whiting in Northwest Indiana that banded together to minimize rail freight impacts to communities. These cities in northwest Indiana originally banded together to oppose the acquisition of Conrail by CSX and NS due to anticipated large increases in freight traffic through their communities.

The Four Cities Consortium negotiated settlement agreements with CSX railroad, including \$4 million worth of improvements to mitigate at-grade crossings. The mayors of the municipalities have changed local city ordinances to increase the fines to railroads for blocked at-grade crossings and assumed the power to prosecute tickets, which was previously held by the State and county and not consistently enforced.

The Consortium signed a settlement agreement in 2001 with CSX to move rail traffic from the CSX Barr subdivision with 27 road crossings through Hammond, East Chicago, and Gary to the grade-separated Porter Branch/IHB line. Once engineering work was completed to determine the upgrades needed for the reroute, particularly to the 11 bridges, the cost for improvements was determined to be six times higher than expected and the funding in place would not be sufficient. The project was then broken into three phases. NIRPC has approved Phase I funding of \$6.5 million for bridge construction through the Congestion Mitigation and Air Quality Improvement Program (CMAQ); however, it is likely that the Phase I funding will not be permitted to be expended until funding for the full project is secured³⁹. The group also has advocated for new intermodal development opportunities that rail rerouting would present⁴⁰.

Educational Institutions

A number of Indiana colleges, universities, and community colleges offer educational programs related to logistics. The *Logistics Directory* published by the Ports of Indiana lists nine institutions offering logistics-oriented degrees. Educational offerings by the institutions include Bachelor of Science degrees in supply chain management, Master of Business Administration degrees with a major in supply chain operations, Bachelor of Science degrees in operations management with a focus on goods and services, and Associate of Applied Science in logistics management. As they market their programs to potential students, these institutions contribute to awareness of opportunities in the logistics industry.

³⁹ NIRPC

⁴⁰ Interview with Justin Murphy, Murphy Law, representing Four Cities Consortium, September 15, 2008.

Project Identification and Prioritization

Project Identification

According to FHWA regulations, all state transportation planning is required to consider eight planning factors.

1. Support economic vitality of the United States, the states, metropolitan areas, and nonmetropolitan areas, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and nonmotorized users;
3. Increase the security of the transportation system for motorized and nonmotorized users;
4. Increase accessibility and mobility options available to people and freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements, state and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation; and
8. Emphasize preservation of the existing transportation system.

While only two of the factors directly mention freight, all the factors have a freight component, particularly the first factor promoting support of the economic vitality of the United States. Improvements that contribute to safe, efficient highway operations are critical for trucks using the roadways, as well as passenger vehicles. Similarly, an efficient rail system is important for both freight trains and passenger trains that share rail infrastructure.

The Indiana Strategic Highway Safety Plan (SHSP) required by SAFETEA-LU identified 13 emphasis areas requiring safety focus. Emphasis areas are defined by analysis of state crash data and may address crashes by infrastructure type, crash type, vehicle type, population at risk, or driver behavior. Two of the SHSP emphasis areas specifically address freight: 1) reduce large truck crashes; and 2) reduce crashes at highway-railroad crossings. Many other emphasis areas also apply to freight movement, such as reducing impaired driving, reducing roadway departure crashes, and reducing intersection crashes. For some strategies identified in the SHSP, infrastructure projects are developed in the HSIP. Implementation of other strategies in the SHSP may require legislative changes, educational programs, or enforcement efforts that are addressed by other programs or agencies.

Project Prioritization

The long- and short-range project prioritization processes are clearly defined in state plans. Indiana's 10-year infrastructure program Major Moves (2006-2015) used a scoring process for major new capacity projects with construction costs expected to exceed \$5 million. Three primary components comprise Major Moves project scores: 1) transportation efficiency; 2) safety; and 3) economic development and customer input. Factors addressing project preservation or enhancement comprise 50 percent of the project's score, safety criteria 25 percent of the score, and criteria evaluating creation or retention of jobs, economic development, and customer input the remaining 25 percent. According to the 2030 Long-Range Transportation Plan, economic points were awarded only when direct economic impacts from a transportation project could be identified. Table 6.1 shows the scoring categories, elements, and maximum possible scores for Major Moves projects.

The Statewide Long-Range Transportation Plan adopted in June 2007 used a prioritization process similar to Major Moves but with fewer scoring criteria. The analysis primarily used the state travel demand model for information on congestion benefits, road use, and vehicle classification data (truck and automobile volumes) to determine projects' importance to the transportation system and to evaluate project priority. In the scoring process, projects were rated via points awarded in the categories shown in Table 6.2. Up to 15 points in the first four categories in the table combined could be awarded based on a project's ability to improve performance. Up to 5 points could be awarded based on the roadway classification.

Because lack of data prevented use of the full Major Moves scoring process including factors such as economic development and customer input to develop the long-range plan, a "project priority" rating also was considered. This was intended to compensate for the overemphasis on projects with higher traffic volumes and significant congestion located on interstates or the National Highway System. Projects were given 1 to 4 points based on the INDOT long-range planning district liaison's evaluation of project priority, ranging from 1 for low support to 4 for committed projects included in Major Moves. Given that all projects in Major Moves are funded, Major Moves essentially serves as the first 10 years of the long-range plan.

Table 6.1 Major Moves Project Scoring Process

| Goal | Factors | Maximum Score |
|--|--|---------------|
| Transportation Efficiency | Cost-Effectiveness Index – Measure of Benefit/Cost Ratio and Net Present Value of Investment | 20 |
| | Congestion Relief – Measure of Mobility using Truck and Automobile AADT, V/C Ratio, and Change in LOS from the Improvement | 15 |
| | Road Classification – Measure of Highway Importance | 5 |
| | Percent Complete in Development | 5 |
| | Adjacent State or Relinquishment Agreement – Measure of Interstate Connectivity | 3 |
| | Corridor Completion – Measure of Project’s Ability to Complete Statewide Connectivity Targets | 2 |
| | Transportation Efficiency Total Points Possible | 50 |
| Safety | Crash Frequency/Density, Crash Severity, and Fatality Rate Ratio | 25 |
| | Safety Total Points Possible | 25 |
| Economic Development | Jobs Created or Retained | 10 |
| | Economic Distress and Cost-Effectiveness | 5 |
| Customer Input | Local Planning Agency Input | 4 |
| | Legislative and Elected Officials | 3 |
| | Other Citizen Input | 3 |
| | Economic Development/Customer Input Total Points Possible | 25 |
| Bonus Points | | |
| Earmarks | Public/Private or Local Participating Funds | Up to 100 |
| Urban Revitalization | | 10 |
| Total Points Possible, Including Bonus Points | | 210 |

Source: INDOT 2030 Long-Range Transportation Plan.

MPOs prioritize their projects using a range of methods. While most MPOs do not use any freight criteria in their prioritization, four MPOs interviewed do incorporate freight factors. MACOG assigns points to projects that promote intermodal or multimodal activity. In 2004, MACOG undertook a freight study that involved interviewing over 100 freight companies that recommended freight improvements. These recommendations were considered in development of highway projects in the long-range plan and noted in the highway project listing. OKI recently updated its scoring process to include a freight criterion (percent trucks) for highway projects. In addition, OKI includes a separate category for non-highway freight projects. Kentuckiana Regional Planning and Development Agency (KIPDA) project sponsors are asked to identify if projects benefit the movement of freight and if they are on freight corridors; the scoring process for the long-range plan and TIP reflects these factors. NIRPC scoring awards points for

intermodal connectivity that can apply to truck terminals, rail/truck terminals, and commercial harbors. In the future, the NIRPC long-range plan may use economic development as a project selection criterion, which would boost freight's consideration.

Table 6.2 Long-Range Plan Scoring Process

| Category | Low Measure | High Measure | Point Range |
|------------------------|-----------------------|--------------|-------------|
| Automobile AADT | 0-16,000 | >72,000 | 0-2.5 |
| Truck AADT | 0-1,200 | >5,400 | 0-2.5 |
| V/C Ratio | .55-.64 | >=1.51 | .5-5 |
| LOS Improvement | LOS F | LOS A | 0-5 |
| Highway Classification | Local Access Corridor | Interstate | 0-5 |

Source: INDOT 2030 Long-Range Transportation Plan.

Note: LOS Improvement is based on the change in LOS achieved; i.e., a project that would raise LOS from F (0 points) to LOS C (3 points) would receive 3 points (3-0=3).

Safety

Operation Lifesaver

Operation Lifesaver is a nationwide, nonprofit public education and awareness program dedicated to reducing collisions, fatalities, and injuries at highway-rail intersections and on railroad property. The program is sponsored cooperatively by Federal, state, and local government agencies; highway safety organizations, and the nation's railroads. Operation Lifesaver maintains statistics on highway/rail incidents by county and participates in educational events throughout the State. Operation Lifesaver promotes the "three Es" of railroad grade crossing safety:

1. **Education** - Through increased public awareness of the dangers of grade crossings to vehicles and pedestrians;
2. **Enforcement** - Of traffic laws related to crossing signs and signals; and
3. **Engineering** - Through encouragement of continued engineering research and innovation to improve railroad grade crossing safety.

Strategic Highway Safety Plan

The Indiana Strategic Highway Safety Plan identifies 2 of 13 emphasis areas related to freight: reduction of large truck crashes and reduction of crashes at highway-rail crossings. Many of the other emphasis areas also are relevant to freight, and improvements in those arenas will contribute to fewer crashes involving trucks and trains.

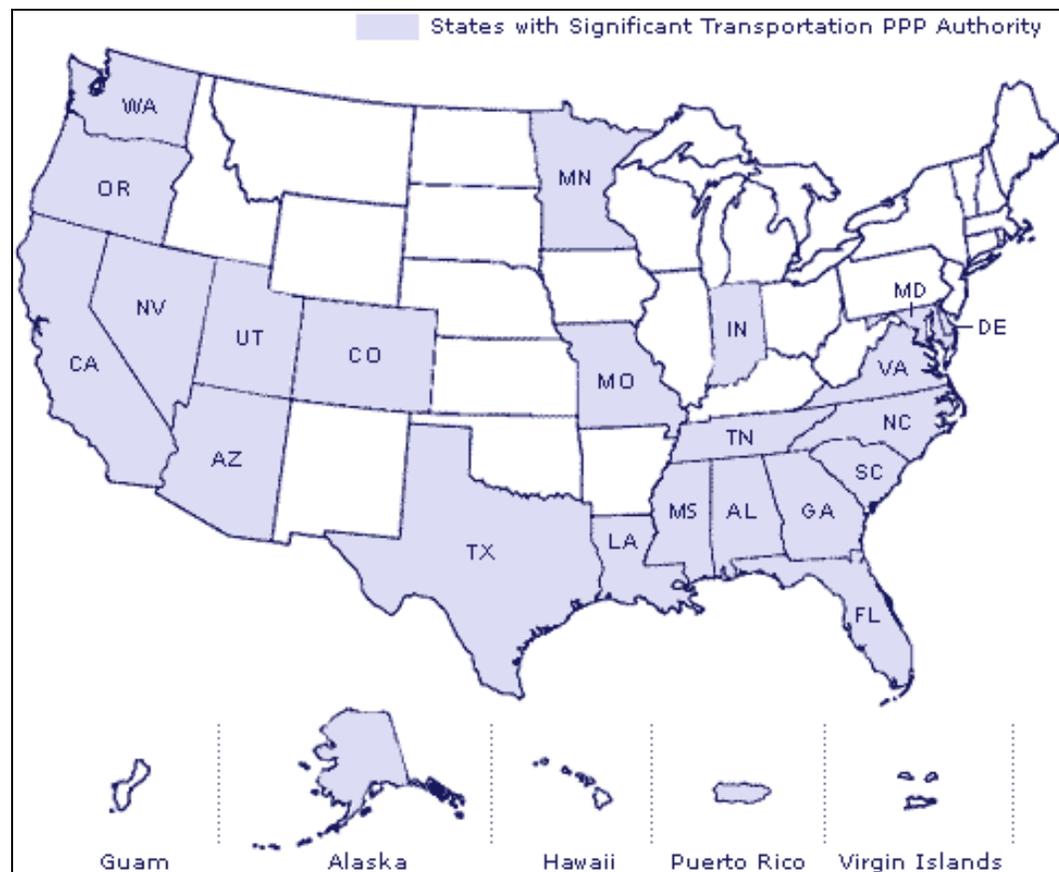
6.2 MANDATES

Public-Private Partnerships

Indiana is at the forefront of developing public-private partnerships for operating transportation infrastructure, having leased the Indiana Toll Road to a private operator beginning in 2006. The State enacted House Enrolled Act (HEA) 1008 (IC 8-15.5; 8-15.7), which authorized the Indiana Toll Road long-term lease transaction. The legislation also established the process for entering into a public-private agreement on I-69 from Indianapolis to Evansville. However, the law specifically prohibits the State from entering into such an agreement for any other road or project without further legislative approval.

According to FHWA, Indiana is one of 23 U.S. states and one U.S. territory that have enacted statutes enabling the use of various public-private partnership (PPP) approaches for the development of transportation infrastructure, as shown in Figure 6.2.

Figure 6.2 States with Public-Private Partnership Enabling Legislation



Source: FHWA.

Various economic development agencies outside INDOT partner with the private sector to provide support in retaining and attracting companies to the State. Key agencies are described below.

Indiana Economic Development Corporation

The Indiana Economic Development Corporation (IEDC) was established in 2005 as the State's leading economic development agency, replacing the former Department of Commerce. The IEDC is organized as a public-private partnership, governed by a 12-member board of directors chaired by the Governor. While the IEDC seeks investments in job creation in all industries, it focuses on eight sectors that offer particular opportunities for Indiana, including the Transportation, Distribution, and Logistics sector.

IEDC promotes economic development legislation such as the Major Moves infrastructure investment program. Other efforts include domestic and international outreach on the benefits of corporate location in Indiana. IEDC provides business grants, incentives, and programs, including workforce training, permitting assistance, and small business development support. Specific incentive programs offered by IEDC are listed in Chapter 8.

The Indy Partnership

The Indy Partnership provides economic development assistance in the 10-county greater Indianapolis region. The organization provides data on regional benefits and corporate relocation and expansion assistance. Members of the Indy Partnership include county economic development professionals and corporations.

Rail Corridor Preservation and Development

INDOT's Rail Office manages initiatives aimed at preserving and developing freight and passenger corridors throughout the State. Rail corridor preservation is achieved through financial assistance to railroads and port authorities, participation in regional planning groups, and monitoring of rail industry developments. Recently the Office has focused its efforts on economic development and upgrading track for 286,000 pound rail car capability. The Rail Office uses the Industrial Rail Service Fund described in Chapter 7 to issue grants to maintain and upgrade "excepted" track, the lowest classification of track by the FRA over which railroads are permitted to operate with a maximum train speed of 10 mph. Since 1999, more than \$12 million has been invested in infrastructure improvements for Indiana shortline railroads.

INDOT's Rail Office is a participant in the Midwest Regional Rail Initiative studying development of high-speed passenger rail services through a nine-state area. If developed, this system would provide high-speed rail service (80-110 mph) with shorter travel times, increased frequency of service, accessibility, and reliability. Other participating states include Illinois, Iowa, Michigan, Minnesota,

Missouri, Ohio, Nebraska, and Wisconsin. Based on national and regional considerations, three high-speed rail routes have been designated through Indiana:

1. Chicago through Toledo to Cleveland;
2. Chicago to Detroit; and
3. Chicago through Indianapolis to Cincinnati and to Louisville.

Current passenger rail service runs almost entirely on freight rail lines and must coordinate with freight trains. Nationally, more than 97 percent of Amtrak's 21,000 miles of routes run along tracks owned and maintained by private freight railroad companies.

The Indiana State Legislature had created the Transportation Corridor Planning Board (IC 8-4.5), which was coordinated by INDOT's Rail Office, to examine the most efficient and beneficial reuse of abandoned rail corridors. The legislation provides for four potential use strategies: 1) future freight rail; 2) future passenger rail; 3) pedestrian trails; and 4) underground utility corridors. According to the legislation, each year the rail section is to identify a list of corridors that may be abandoned, set priorities for future uses if they are abandoned, and coordinate with the railroad owner that may be abandoning the line.

The 2003 *Indiana Rail Corridor Preservation Study* found that "The process to preserve rail corridors in Indiana is cumbersome and inflexible, which precludes INDOT from taking the necessary steps to acquire rail corridors under the Federal acquisition procedures." The study also attributed challenges in rail corridor preservation to a "duplicative, time-consuming, and likely unnecessary" review and public input process conducted by the Transportation Corridor Planning Board (TCPB), an independent board created by the Indiana legislature to consider rail corridor preservation. The TCPB dissolved following publication of the study.

Hazardous Material Restrictions

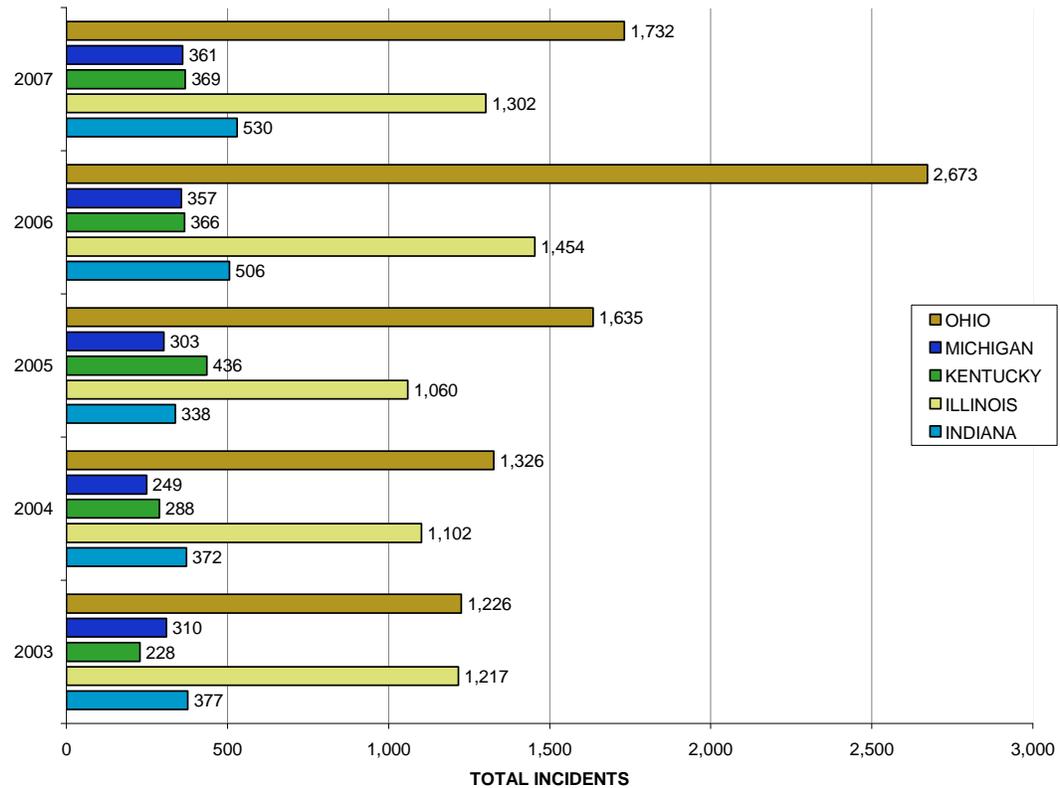
State and National Regulation

Hazardous material transport is regulated under the Federal Hazardous Materials Transportation Law by the Office of Hazardous Materials Safety (OHM). Hazardous Materials Regulations cover "hazardous materials definitions and classifications; hazard communications; shipper and carrier operations, training, and security requirements; and packaging and container specifications."⁴¹ According to the OHM, risk management principles and security threat assessments are employed to understand, communicate, and reduce hazardous materials dangers inherent in transportation.

⁴¹United States Office of Hazardous Materials Safety.

Figure 6.3 displays hazardous materials (hazmat) incidents (air, rail, highway, and water) for Indiana and neighboring states from 2003 to 2007.

**Figure 6.3 Hazardous Materials Incidents
2003-2007**



Source: U.S. Department of Transportation, Hazardous Materials Information System, <http://hazmat.dot.gov/pubs/inc/data>.

At the state level, cleanup and remediation for hazardous materials spills and incidents is organized through the Indiana Department of Environmental Management, which has a primary Indianapolis location in addition to three regional offices throughout the State.

At the local level, hazardous materials are addressed both through preventative and reactive measures. An example of a preventive technique can be seen in Northwest Indiana, where NIRPC describes hazmat routing as being determined by local emergency management agencies. On the reactive side, fire departments such as the Carmel Fire Department employ a special hazard response unit, composed of officers and firefighters with specialized hazardous materials

training.⁴² In addition, the department is “a member of the Hamilton County Hazardous Materials Task Force, which is a combined effort of all fire departments in Hamilton County to coordinate and train together for scenarios that are outside the capabilities of one fire department. The task force has a hazmat response vehicle maintained by Noblesville Fire Department; Carmel Fire Department’s vehicle comprises some of the other resources. The task force also responds to municipalities that do not have any hazmat response resources.”⁴³

⁴²According to the Carmel Fire Department web site: “The Hazardous Materials Response Team operates with 13 officers and 13 firefighters who have completed an 80-hour hazardous materials technician training class. Some team members have gone on to further their training by attending the National Fire Academy chemistry of hazardous materials, hazardous materials site practice class, Weapons of Mass Destruction class, as well as a detonation recognition class.”

⁴³Carmel Indiana Fire Department. <http://www.ci.carmel.in.us/services/fire/hazmat.html>.

7.0 Freight Rail Gaps and Needs

7.1 MAJOR TRADE CORRIDOR GAPS AND NEEDS

Interstate Trade and Commodity Mode Share

This section presents an analysis of commodity flows into and out of Indiana, based on data from the Freight Analysis Framework version 2 (FAF2). The analysis examines major trading corridors, the differences in mode share between corridors, and expected areas of significant growth. The purpose of the analysis is to identify any anomalies that might be caused by deficiencies in Indiana's transportation network, and to predict the future needs of the system.

FAF2 data divides commodities into 43 different categories, many of which are similar to one another in terms of their origins, manufacturing processes, or transportation-related characteristics. These 43 commodities were aggregated into 12 *commodity groups* for this analysis. The commodity groupings are presented in Table 7.1.

Table 7.1 Commodity Groupings for FAF2 Analysis

| FAF2 Commodity Category | Commodity Group |
|--|---------------------------|
| Basic chemicals | Chemicals and Fertilizer |
| Chemical products and preparations, n.e.c. ¹ | Chemicals and Fertilizer |
| Fertilizers | Chemicals and Fertilizer |
| Coal | Coal |
| Alcoholic beverages | Food and Food Products |
| Meat, fish, seafood, and their preparations | Food and Food Products |
| Milled grain products and bakery products | Food and Food Products |
| Other prepared foodstuffs | Food and Food Products |
| Tobacco products | Food and Food Products |
| Animal feed and products of animal origin, n.e.c. ¹ | Grain, Feed and Livestock |
| Cereal grains | Grain, Feed and Livestock |
| Live animals and live fish | Grain, Feed and Livestock |
| Logs | Logs |
| Articles of base metal | Manufactured Goods |
| Electronics, electrical equipment, and office equipment | Manufactured Goods |
| Furniture, mattresses, lamps, lighting fixtures | Manufactured Goods |
| Machinery | Manufactured Goods |

| FAF2 Commodity Category | Commodity Group |
|--|-----------------------------|
| Miscellaneous manufactured products | Manufactured Goods |
| Motorized and other vehicles (including parts) | Manufactured Goods |
| Nonmetallic mineral products | Manufactured Goods |
| Paper or paperboard articles | Manufactured Goods |
| Pharmaceutical products | Manufactured Goods |
| Plastics and rubber | Manufactured Goods |
| Precision instruments and apparatus | Manufactured Goods |
| Printed products | Manufactured Goods |
| Pulp, newsprint, paper, and paperboard | Manufactured Goods |
| Textiles, leather, and articles of textiles or leather | Manufactured Goods |
| Transportation equipment, n.e.c. ¹ | Manufactured Goods |
| Wood products | Manufactured Goods |
| Base metal | Metals and Minerals |
| Metallic ores and concentrates | Metals and Minerals |
| Nonmetallic minerals, n.e.c. ¹ | Metals and Minerals |
| Mixed freight | Mixed Freight |
| Unknown | Mixed Freight |
| Other agricultural products | Other Agricultural Products |
| Coal and petroleum products ² | Petroleum Products |
| Crude petroleum | Petroleum Products |
| Fuel oils | Petroleum Products |
| Gasoline | Petroleum Products |
| Building stone | Stone, Sand, and Gravel |
| Gravel and crushed stone | Stone, Sand, and Gravel |
| Natural sands | Stone, Sand, and Gravel |
| Waste and scrap | Waste and Scrap |

1. Not Elsewhere Classified.
2. According to FAF, this category is “primarily natural gas, selected coal products, and products of petroleum refining, excluding gasoline, aviation fuel, and fuel oil.” For this reason it was grouped with the Petroleum Products category, rather than with Coal. Significant commodity flows in this category travel by pipeline.

Indiana’s FAF2 data are divided into three geographic regions: The Indiana portion of the Chicago region; the Indianapolis region; and the remainder of the state. For Indiana’s trading partners, less urban states may consist only of one large region, while other states may have larger numbers of urban regions. The

“remainder” region in states that consist of more than one region may be thought of as representing the more rural portions of the state, although in many cases, including Indiana, a number of smaller cities are also included in that region.

Top Overall Trading Partners, Present and Future

By weight, Indiana’s top domestic trading partners (including international trade gateways) are its four neighboring states. Illinois, Ohio, Michigan, and Kentucky collectively accounted for nearly 60 percent (by weight) of all interstate trade with Indiana in 2002, according to FAF2. Illinois alone accounted for 27 percent. The next largest trading partner in 2002 was Louisiana, driven by transportation of petroleum products (primarily by pipeline). Rounding out the top ten trading partner states are Minnesota, New Jersey, Wyoming, West Virginia, and Georgia. These trading corridors represent a variety of high-volume bulk goods, chiefly minerals and metals (Minnesota); petroleum (New Jersey); coal (Wyoming and West Virginia); and grain and feed (Georgia). A considerable share of these movements also relate to international trade, particularly those involving petroleum products and grain, feed, and livestock. These top ten trading partners collectively represented 78 percent of interstate trade with Indiana by weight in 2002.

In 2035, FAF2 forecasts indicate a substantial shift in the states with which Indiana trades. Indiana’s four neighboring states are projected to maintain their top ranking through 2035, with Illinois losing some share to the other three states, and all four ranging between 12 percent and 19 percent of total interstate trade with Indiana. Louisiana and Wyoming also remain significant, on the strength of their respective energy sectors. However, the remaining top ten states or districts in 2035 are all new to the list: Wisconsin, the District of Columbia, Tennessee, and Texas. Two of these areas are projected to see significant growth in petroleum flows (DC and Texas), Wisconsin has large forecasted growth in waste and scrap trade, and Tennessee increases its profile on the strength of grain and feed trade. These top ten trading partners are forecasted to collectively represent 80 percent of interstate trade with Indiana by weight in 2035.

In the larger scheme of things, Indiana’s trade network is expected to be about as diverse in 2035 as it was in 2002, with 25 states representing 95 percent of trade, by weight, in both years. However, the total tonnage transported to and from these 25 states will more than double, from approximately 486 million tons in 2002 to over 1 billion in 2035. In spite of the fact that the rail and highway networks are both already approaching capacity in many locations, the FAF2 growth forecasts indicate continued reliance on these modes, which are expected to maintain a mode share of over 70 percent in 2035, up from 65 percent in 2002. Capacity expansion on these dominant modes will be essential, although some shifting of modes may also be possible. For example, several of Indiana’s top trading partner states are reachable by water, including West Virginia, Wyoming, Louisiana, and Wisconsin. The maritime highways, and Indiana’s

major port facilities, have excess capacity to accommodate additional waterborne trade.

Analysis of Mode Share and Top “Commodity Corridors” by Commodity Type

Chemicals and Fertilizer

This is not a major commodity in Indiana by weight, and nearly 40 percent of the goods transported in Indiana in this category represent intrastate shipments. The top out-of-state trading partner is the Chicago region of Illinois, representing another 15 percent. Whereas nationally this commodity moves by truck over 70 percent of the time, chemical and fertilizer trade between Indiana and the Chicago region of Illinois has a *rail* mode share of over 55 percent.

Coal

By weight, coal is the seventh most significant commodity in Indiana. According to FAF2, 77 percent of coal in Indiana moved by rail, the largest rail share of any of the twelve commodity groups. Coal accounted for nearly 40 percent of all tonnage transported by rail in the state. By weight, 38 percent of Indiana coal shipments were intrastate in 2002, and 38 percent of that moved by truck. By comparison, trucks represented less than 10 percent of the mode share for each of the top 16 most significant out-of-state coal trading partners, including corridors between Indiana and the neighboring states of Illinois, Kentucky, and Ohio. The top interstate trading partners for coal are Wyoming, West Virginia, and Illinois, with significant quantities (over 1 million tons annually) connecting with Montana and Virginia. Other states trading over 100 thousand tons of coal with Indiana in 2002 were Kentucky, Alabama, Pennsylvania, Ohio, and Michigan.

Rail was the overwhelmingly preferred mode in most cases. Notable exceptions are shipments between rural Indiana (non-Indianapolis and non-Chicago regions) and the states of West Virginia and Pennsylvania, where over 80 percent and 98 percent of coal shipments, respectively, were transported by water. Almost one quarter of coal shipments between rural Indiana and rural Ohio moved by truck/rail intermodal, and nearly all shipments between the Indianapolis region and rural Kentucky moved exclusively by truck. This latter figure, representing almost 200 thousand tons, highlights the lack of high-capacity rail infrastructure between Indianapolis and Kentucky.

By 2035, FAF2 predicts that coal trade between Wyoming and rural Indiana will more than triple to almost 49 million tons annually, becoming the top corridor for coal trade with Indiana. Trade between Wyoming and the Chicago region of Indiana is the second busiest coal corridor in the 2035 forecast with an additional 8 million tons. Wyoming is expected to provide the vast majority of all of Indiana’s coal in the future, nearly all of it transported by rail. This enormous increase in coal trains between Indiana and the west would be unsustainable over the existing rail network, underlining the need for major capacity expansion and renewed efforts to bypass the Chicago rail bottleneck. Although FAF2 does

not account for it, there is also significant potential for diversion to waterborne routes, both over the Ohio River and, potentially, across the Great Lakes, to avoid Chicago.

Food and Food Products

This commodity group includes a variety of manufactured and packaged food products, beverages, tobacco, alcohol, and other related foodstuffs. Intrastate flows account for just over one third of all food products transportation in Indiana, with neighboring states contributing much of the remainder. There are 59 corridors with at least 100 thousand tons of food and food products shipped two or from Indiana. Among neighboring states (Illinois, Kentucky, Michigan, and Ohio), trucks generally carry 85 percent or more of the total tonnage. Trading partners to the east, including Pennsylvania, South Carolina, and the metropolitan regions of Baltimore and Atlanta, exhibit much higher rail mode share (86 percent in the case of South Carolina). In some cases this may indicate a high rate of international trade through these points, such as the major ports in Baltimore and New York. However, corridors without major ports, such as Tennessee, Atlanta, and rural Georgia (non-Atlanta and non-Savannah), also exhibit significant rail mode shares.

Major trade corridors for food and food products with either end in the Chicago region of Indiana tend to have higher truck mode share than corridors involving the same out-of-state location connecting with other parts of Indiana. This is likely an indication of Chicago's overloaded rail network. Among the trade corridors with over 100 thousand tons in 2002, four of the five that exhibit a significant truck/rail intermodal share (greater than 10 percent) are in California.

An important trend likely to continue in the future is the growth in international trade of food and food products. FAF2 demonstrates this trend by predicting that by 2035 three of the top 15 trade corridors for this commodity will be between rural Indiana and the port regions of New York, Baltimore, and South Carolina.

Grain, Feed, and Livestock

Of the 65 million tons of grain, feed, and livestock transported in Indiana in 2002, nearly 40 percent consisted of in-state movements, representing transfers from farms to grain processing facilities, meatpacking plants, biofuels facilities, and other locations. The largest out-of-state corridors are those linking the Illinois and Indiana sides of the Chicago region, and the rural portions of the two states. Trade between Indiana and Illinois represented another 16 percent of total grain, feed, and livestock transportation in Indiana in 2002. Trade across the state line in the Chicago region was over 90 percent by truck, and trade corridors involving either of the states' Chicago regions, or the Indianapolis region, was likewise truck-oriented. On the other hand, trade between the remainder of Indiana and non-Chicago parts of Illinois was much more rail-dependent, with a rail share of 70 percent or more.

Many of the other top trading partners for grain, feed, and livestock are states on the eastern seaboard and gulf coast, such as South Carolina, Georgia (both Atlanta and the remainder of the state), Louisiana, Alabama, North Carolina, and even Florida. In most cases, transportation between Indiana and these more distant destinations is overwhelmingly by rail, with a 90 percent or higher mode share. The one significant exception is New Orleans, where the mode share to and from Indiana is almost 75 percent waterborne. Neighboring states of Kentucky, Ohio, and Michigan also appear prominently, and trade with these states is almost 100 percent by truck in most cases.

The most significant predicted change for 2035, other than a near doubling of grain, feed, and livestock transport in Indiana, is a much more prominent role for southeastern states in trading these commodities with Indiana. While intrastate movements maintain their prominence and similar share of the total (41 percent), Atlanta and rural South Carolina claim the top two interstate corridors. The states of South Carolina and Georgia are expected to account for nearly 20 percent of all grain, feed, and livestock transport originating or terminating in Indiana. Illinois's share of the market is forecasted to slip to around 14 percent, although the total tonnage between Indiana and Illinois will still grow by 70 percent.

Logs

This commodity is primarily harvested and transported in-state. Intrastate movements account for nearly 60 percent of log shipments in Indiana, and these movements were nearly 100 percent by truck in 2002. Other top corridors primarily connect rural Indiana with rural and metropolitan regions of Indiana's neighboring states, and no one corridor accounted for even 300 thousand tons. These movements are also nearly 100 percent truck, with one notable exception: the corridor between the St Louis region of Illinois and the Chicago region of Indiana, in which the rail share of movements was over 98 percent. This likely reflects a single shipper operating unit trains over the very active rail corridor linking Chicago and St. Louis.

In the future, interstate transportation of logs is expected to gain in prominence, with in-state movements slipping to only 48 percent of the total. Trading partners, and the dominance of trucks for these types of movements, are predicted to remain largely unchanged in the future. The dominance of the truck mode for these types of movements is likely due to the relatively modest volumes carried into and out of Indiana, in comparison with other states that export enormous volumes of timber, primarily by rail.

Manufactured Goods

Manufacturing is not only one of the most vital economic drivers in Indiana, it is also a sector that pumps enormous volumes of freight into the state's transportation network. Manufactured goods are second only to petroleum products in total tonnage transported in Indiana, and unlike the latter, the majority of these goods are transported by truck.

According to FAF2, approximately 45 million tons of manufactured goods transported in Indiana were intrastate, 36 percent of the total for these commodities. The largest out-of-state corridor was that linking the Indiana and Illinois sides of the Chicago region. This corridor alone represented 6.6 million tons of freight, over 5 percent of the total. Among the next ten trading corridors, all connect either the Indianapolis or the remaining non-Chicago parts of Indiana with the state's immediate neighbors, and all ten of these corridors have a truck share of at least 85 percent and a rail share of no more than 6 percent. Of the 18 corridors with over 1 million tons transported, only two (St Louis, MO and Nashville, TN) are not immediate neighbors. Truck and rail intermodal is a fairly insignificant mode in comparison with truck-exclusive and rail-exclusive modes, although intermodal movements are somewhat more prominent in corridors that connect with international ports, such as Los Angeles.

Manufactured goods transportation in Indiana is predicted by FAF2 to increase by 134 percent between 2002 and 2035, to a total of nearly 300 million tons in the future year. This represents the third largest percent increase and second largest absolute increase among the twelve commodity groups. Out-of-state trade is expected to gain in prominence, with the dominance of the Chicago to Northwest Indiana corridor supplemented by growing corridors connecting non-Chicago and non-Indianapolis parts of Indiana with Detroit, Louisville, Columbus, and other parts of the states of Michigan, Kentucky, and Ohio. FAF2 predicts continued dominance of the truck-exclusive mode of transportation, an outcome that INDOT may be able to influence through proactive efforts to make intermodal services more accessible and more competitive in the state.

Metals and Minerals

Metals and minerals are a significant contributor to Indiana's economy, supplying many of its major manufacturing industries (including steel, automobiles, and electronics). Likewise, these bulk commodities are among the most significant components of Indiana's freight traffic. The number one trading partnership in 2002, ranking above even intrastate trade, is the corridor linking Northwest Indiana with Minnesota. This is largely due to Minnesota's substantial iron ore production, transported to Indiana by ship for use in its steel mills. This one corridor accounted for over 20 percent of all minerals and metals transportation in Indiana. After intrastate trade, which ranks second, there are nine other corridors with over 1 million tons of minerals and metals transported, and all but two involve neighboring states.

Generally, there is at least a small rail share even along short corridors (9 percent between non-Chicago, non-Indianapolis points in Indiana, and Detroit, for example), and the rail share increases substantially with more distant connections, such as Iowa (76 percent). There are also a number of corridors with very high shares of intermodal connections involving water. This is likely to appear when the commodities are transported long distances over water, with trucks or rail used to transport them from dispersed extraction locations to ports.

Minerals and metals transportation in Indiana has the lowest FAF2-projected growth rate of any of the twelve commodity groups, at 12 percent. The most significant individual corridor shift is the aforementioned Northwest Indiana to Minnesota corridor, which is expected to decline significantly. In its absence, Indiana's immediate neighbors become the state's most significant trading partners, particularly the Chicago region of Illinois, various parts of Michigan, and rural portions of Ohio and Kentucky. Given the relatively short distances of these corridors, trucks are expected to carry a significant portion of this freight, with rail having its strongest share of the market on corridors between Indiana and Ohio.

Mixed Freight

Mixed freight includes "items (including food) for grocery and convenience stores, supplies and food for restaurants, hardware or plumbing supplies, office supplies, and miscellaneous." It also includes other "unknown" items for this analysis. Because of the nature of this type of freight, it is generally transported over short and medium distances, almost exclusively by truck. Of the top 30 interstate corridors, all but three involve origin and destination pairs connecting Indiana to one of its four neighboring states, and every corridor has a truck mode share of greater than 98 percent. Aside from significant growth projections (over 200 percent from 2002 to 2035), there are no major shifts in the freight landscape predicted for this mode.

Other Agricultural Products

This commodity group consists of fruits, vegetables, nuts, and all other crops other than cereal grains and animal feeds. Because of the nature of the goods transported, the relative diversity of origins and destinations, and varying degrees of perishability, this is an unusually multimodal commodity group, in that modes of choice vary widely across different corridors. Unsurprisingly, the top corridor is intrastate, and the mode for intrastate movements is 98 percent truck. However, the top interstate corridor is between rural Indiana and New Orleans, and goods in this corridor move by water 100 percent of the time. Movements to states like Georgia and Alabama are also among the top corridors, and these are primarily rail movements. One common pattern among all corridors is that in spite of the wide variety of modes between different corridors, in each corridor there tends to be one mode that dominates, carrying 70 percent or more of all tonnage. *Intermodal* is also a very uncommon means of transporting these commodities. Geographically, there is a wide network of origins and destinations, with nearly every region of the United States represented among the top 15 trading corridors.

The most significant change expected in 2035 is an increase in the prominence of the southeastern states of Georgia and Alabama as trading partners for agricultural products.

Petroleum Products

By weight, petroleum products, including crude oil, refined fuels, and related products, are by far the top commodity group transported in Indiana, with nearly double the tonnage of the number two commodity group (manufactured goods). Examining specific modes, however, petroleum is the top commodity in only two groups: pipeline (it captures over 95 percent of the state total for pipeline transportation) and water. Given the commodity's dominance of the pipeline mode, and the fact that pipelines are built and operated by the private sector, this analysis focuses on the other modes.

In 2002, there were over 35 million tons of intrastate shipments of petroleum products in Indiana carried by truck alone. At just over 4 million tons, the next highest volume carried by truck was over the Chicago (IN) - Chicago (IL) corridor, site of the largest refinery in the United States outside of the gulf coast region. There were numerous other corridors with over 100 thousand tons carried by truck, almost all of which involved the state's immediate neighbors, as well as Wisconsin. Several more distant destinations, including Detroit, Houston, Oklahoma, Virginia, and New York, exhibited substantial volumes transported by rail. There was also a significant volume, almost six million tons, carried within the state of Indiana over water, while no other trading corridor had significant maritime shipments.

In 2035, FAF2 predicts explosive growth along the Northwest Indiana to Chicago corridor, where truck volumes are expected to triple to over 11 million tons. By that future year, numerous "supercorridors" for truck transportation of petroleum products are expected to come into being, particularly connections with the states of Illinois and Kentucky, where total truck volumes are forecasted to exceed 15 million and 20 million tons, respectively.

Stone, Sand, and Gravel

This is a very significant group of commodities in terms of impact on Indiana's transportation network. Transportation of these commodities is generally characterized by large volumes moving over relatively short distances. In 2002 over 80 percent of all stone, sand and gravel transported in Indiana was moving entirely within the state, by far the highest intrastate share among the twelve commodity groups. These movements were over 98 percent by truck, a pattern expected to continue as intrastate movements increase in the future. Where possible, stone, sand, and gravel will be transported by non-truck modes, including both rail and maritime, even over short distances. For example, between rural Indiana and Louisville, the water mode share was 55 percent in 2002. Between rural Indiana and rural Illinois, the rail mode share was 25 percent. Between northwest Indiana and rural Michigan, barges accounted for over 90 percent of total tonnage. Barges also transport significant quantities of this commodity group on the Ohio River to destinations like West Virginia and the Pittsburgh region.

Waste and Scrap

More than any other commodity, waste and scrap lends itself to substantial rail mode share, even over short distances. Nearly 30 percent of the waste and scrap transported in Indiana moves between the Indiana and Illinois portions of the Chicago region. Of this, 53 percent moves entirely by rail, and another 14 percent by truck/rail intermodal. Even among intrastate movements, rail has almost a 10 percent mode share. Other top corridors include rural Indiana to Cleveland, 80 percent by rail; rural Indiana to Chicago, Illinois, 100 percent by truck; rural Indiana to rural Ohio, 44 percent by rail; and rural Indiana to Detroit, 51 percent by rail. The flows from rural Indiana to Chicago, Illinois moving entirely by truck is common across multiple commodities, and underlines shortcomings of Indiana's short line rail network, particularly its ability to accommodate heavy bulk goods, though for short distances multiple intermodal transfers between truck and rail are not economical

In 2035, growth is expected to occur primarily along existing top corridors, but with a disproportionate emphasis on trucks. For example, in the busy Northwest Indiana to Chicago corridor, the truck share is predicted to increase from 34 percent to 87 percent. Wisconsin is expected to appear as a new top trading partner, with waste and scrap transported primarily by rail.

7.2 INTERMODAL FACILITY NEEDS

Indiana currently hosts five intermodal facilities that handle trailer-on-flatcar (TOFC) and/or container-on-flatcar (COFC) traffic. They are located in Avon (CSX), Fort Wayne (NS), Evansville (CSX), Remington (Toledo, Peoria & Western Railway), and Indianapolis (Indiana Rail Road Company). Three of these five facilities are served by eastern Class I railroads. Where west coast services are offered, they are handled through interchange agreements with western railroads, principally UP and BNSF. Transit times from Indiana to the west coast tend to be significantly longer than from Chicago due to the lack of direct services. This time disparity is the reason why most intermodal shipments between Indiana and the west coast currently transfer between truck and rail in northeast Illinois.

Upgraded Intermodal Services to the West Coast

The two CSX Intermodal terminals in Indiana both offer scheduled intermodal services to the west coast. However, transit times are substantially longer than services from Chicago to those same west coast terminals. For example, containers shipped from Evansville to Portland take almost seven full days to arrive. From Chicago, the time is 3.5 days. The only west coast destinations offered from Indianapolis are Los Angeles and Oakland, and transit times are almost eight days to either destination. In practice, most intermodal shippers with freight moving between Indiana and points west will complete the Indiana portion of the journey via truck, transferring between truck and rail in the

Chicago region. Not only does the long distance traveled by truck increase the overall cost of transportation, but growing congestion in the Chicago region is exerting a negative impact on travel time reliability. This is a continuing threat to the competitive advantage of various Indiana industries, particularly the manufacturing, warehousing, and distribution sectors.

One proposal for upgrading intermodal connectivity between Indiana and the west coast involves attracting a western railroad to directly serve an intermodal terminal in Indiana, eliminating the need for an east-west interchange in Chicago or elsewhere. This would either require constructing a new intermodal terminal or upgrading an existing one, and would require utilizing trackage rights on an existing rail line or constructing a new one between Illinois and Indiana. One existing intermodal terminal with excess capacity is the Hoosier Lift in Remington. It currently operates well below its capacity of 35,000 lifts per year. It is served by the Toledo, Peoria & Western Railway (TPW), which interchanges with the BNSF in Illinois. With sufficient market demand, dedicated intermodal trains could be directly operated by BNSF or operated by the TPW from Remington to Galesburg, where it would interchange with the BNSF.

Another way to speed transit times to the west coast and improve reliability would be to increase capacity through the Chicago rail hub. One potential strategy is the use of corridors on the periphery of Chicago, such as the Elgin, Joliet, and Eastern Railway (EJ&E), which forms a loop from northwest Indiana to Waukegan, Illinois, passing through Joliet and the collar counties of Chicago. Canadian National Railway has recently purchased the line from U.S. Steel (the parent company of the EJ&E). Another potential route would be the TPW line, which could serve as a direct link between the NS and the BNSF, interchanging at Logansport, Indiana and Galesburg, Illinois, respectively.

These and other potential solutions all depend on a commitment and some level of financial investment by the private railroads, which in turn would depend on well-documented evidence of unmet demand for intermodal services. One indication of the growth potential for intermodal services comes from FAF2, which suggests that the demand for transportation of Manufactured Goods to and from Indiana by the “Truck and Rail” mode will nearly triple between 2002 and 2035.⁴⁴ Eight of the top 10 trading partner locations for Manufactured Goods in 2035 are west of Indiana. Given the State’s limited capacity to handle intermodal transfers between truck and rail, and the relatively low level of rail service to the west coast, much of the current and future demand are likely to be satisfied in surrounding locations, notably Chicago, Cincinnati, and Louisville.

⁴⁴Note: These figures are based on the consultant’s analysis of FAF data, with “Manufacturing” representing the aggregation of 17 different FAF commodity categories, including electronics, textiles, electronics, pharmaceuticals, and machinery.

Public support in the form of infrastructure investment and the facilitation of cooperative agreements between private parties may be a catalyst toward improving Indiana's positioning with regard to intermodal freight. The Ports of Indiana is already authorized by the state to develop an inland port and has access to funding tools such as revenue bonds to finance capital projects. The Ports of Indiana may be in the best position to take the long-term financial risk associated with developing an intermodal terminal of the size needed to support dedicated west coast services, a necessary condition of attracting a railroad to operate such a service.

Short-haul Intermodal

Among the recommendations of the 2002 Indiana Rail Plan was the suggestion that the State look into developing a short-haul intermodal rail corridor between Louisville and Chicago, following the I-65 corridor. Short-haul intermodal rail services attract shippers by providing high-frequency, reliable scheduled services over specific high-volume corridors, combined with rapid turnaround times for loading and unloading trailers at terminals (as short as 15 minutes). Such a service would likely be provided using articulated intermodal rail technology such as Canadian Pacific's Expressway service, which allows rapid loading and unloading of traditional non-reinforced trailers and platform rail cars. Triple Crown Services, which currently operates a hub in Fort Wayne, is another model of how potential short-haul intermodal services might operate. Triple Crown customers use specially designed RoadRailer trailers that are capable of riding directly on the rails, allowing rapid assembly of dedicated RoadRailer unit trains.

Analysis of the flow of commodities such as food products and manufactured goods indicates above-average truck mode share on flows that move within the greater Chicago region, as well as between Chicago and points to the near south and southwest, such as Kentucky. This is consistent with earlier observations about the need for improved rail services, including intermodal, along the I-65 corridor between Chicago and Louisville. Short-haul intermodal along the I-65 corridor would lower the cost of transportation between Indiana and the Chicago area, a particularly attractive corridor for shippers that currently dray containers to Chicago to connect with the railroads destined for the west coast. The Ports of Indiana could facilitate such a service by financing the needed terminal facilities and entering into an agreement with a railroad to operate the service.

Southwest Indiana Intermodal Terminal Feasibility Study

In 2006, R.L. Banks & Associates completed the Southwest Indiana Intermodal Terminal Feasibility Study, commissioned by the Gibson County Chamber of Commerce. The study found that it was technically feasible, and that a market exists, to expand intermodal terminal capacity in Southwest Indiana to accommodate between 35,000 and 75,000 intermodal units per year, including the approximately 20,000 units processed at the existing CSX terminal in Evansville. These figures are based on potential demand, and are contingent

upon either CSX, NS, or both, agreeing to operate new intermodal lanes from the region (currently the only available direct lane is from Evansville to Chicago). An updated in-depth study of intermodal facility development potential in southwest Indiana is currently underway.

7.3 STATEWIDE RAIL INFRASTRUCTURE NEEDS

Current and Future Capacity of Primary Rail Corridors

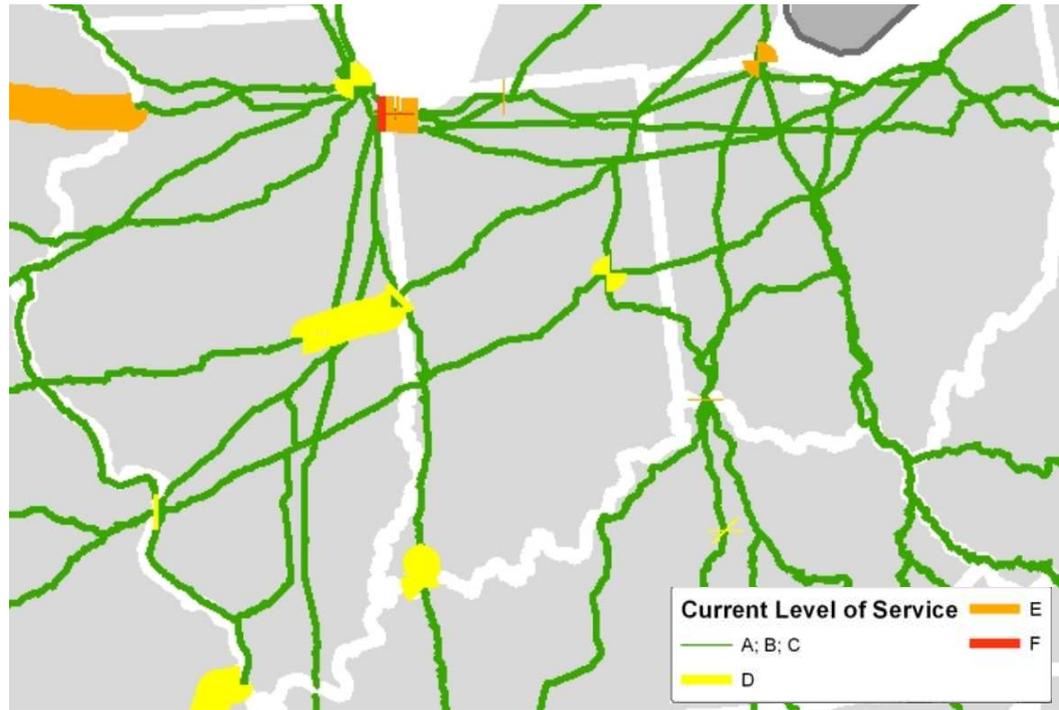
The *National Freight Rail Infrastructure Capacity and Investment Study*, prepared for the Association of American Railroads in September 2007 (“AAR Study”), examined current and future capacity on the national railway network in the continental United States, based on existing data and U.S. DOT nationwide freight forecasts. Focusing on primary rail corridors, the study estimated a needed investment of nearly \$150 billion in railroad capacity expansion to maintain rail’s existing market share of freight movements at current levels of service between 2007 and 2035. The majority of this cost would be the responsibility of the nation’s Class I railroads. This would be above and beyond the investment necessary to maintain the existing system.

As part of the study, a methodology was developed for estimating current and future Levels of Service (LOS) on rail corridors, based on the same principles used in defining highway LOS. In spite of Indiana’s proximity to the congested Chicago rail hub, most of the state’s major rail corridors are currently operating with excess capacity, as shown in Figure 7.1. The only portions of the 2007 Indiana primary rail network operating at LOS E or F are small portions of CSX and CN mainlines just outside of Chicago, and the junction in Muncie where major NS and CSX lines intersect. However, as Figure 7.2 shows, without investment in capacity expansion the majority of Indiana’s primary rail corridors will degrade to LOS E and F by 2035. This includes all but one of the east-west mainlines radiating from Chicago, the entirety of both north-south mainlines in Indiana, and the east-west NS line from St. Louis to Cleveland via Fort Wayne. An additional line of significance to Indiana but not included in the AAR Study is the east-west NS line connecting St. Louis and Louisville via Princeton and New Albany.

The network forecasts developed for the AAR Study are based on a U.S. DOT estimated 88 percent increase in freight rail demand nationwide between 2007 and 2035. Indiana’s share of this significant growth is driven by the volume of pass-through traffic that Indiana railroads carry and the state’s significant manufacturing base, coal consumption, and agricultural industry. While the degradation in LOS projected for Indiana is widespread across the continental United States, it is not universal. Generally, the worst conditions are forecasted to exist in the upper Midwest and the Southwest, while less severe conditions are projected for the east coast, the Gulf Coast, and the Northwest. Should conditions progress as forecasted in this base case scenario, Indiana would be at

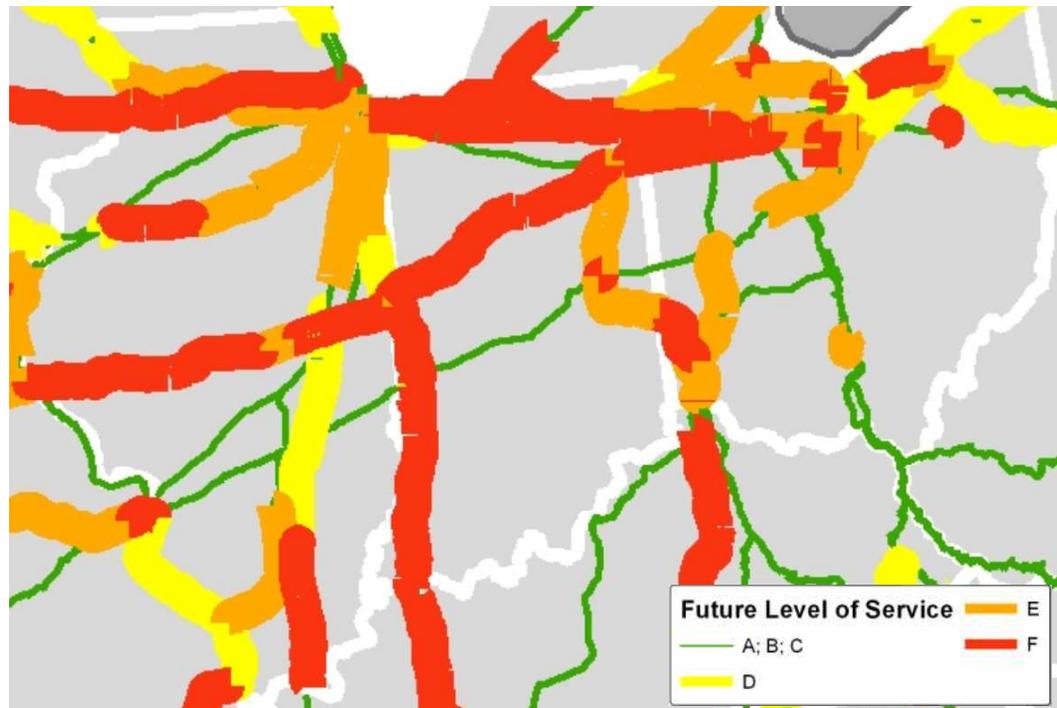
a significant economic disadvantage in terms of attracting and retaining freight-dependent industries, and the costs of numerous goods and services, most notable electricity, fuel, and agricultural products, could also rise significantly in response to spiraling transportation costs.

Figure 7.1 Primary Rail Network Level of Service, 2007



Source: *National Rail Freight Infrastructure Capacity and Investment Study*. Association of American Railroads, 2007.

Figure 7.2 Primary Rail Network Level of Service, 2035
Without Expansion



Source: *National Rail Freight Infrastructure Capacity and Investment Study*. Association of American Railroads, 2007.

Short Line and Regional Rail Issues

While the AAR Study examined the need for investment in the nation’s major rail corridors, it did not address regional and short line railroad issues. As of 2008 Indiana is home to 39 non-Class I freight railroads, and 16 of the state’s 92 counties are only served by these railroads (see Figure 7.3). The transition among the major railroads over the past several decades toward a “wholesale” approach to operations has resulted in challenges for regional and short line operators and for the markets they serve, as increasing volumes of goods are carried across a smaller number of mainline corridors.

One of the fundamental challenges to smaller operators, particularly those serving bulk shippers of commodities such as agricultural products, is the industry-wide transition to 286 thousand pound-per-axle rail cars. These cars are quickly becoming the industry standard among Class I carriers for the transportation of bulk goods, and a short line’s ability to participate in the nationwide rail network is increasingly dependent upon its ability to accommodate them. Similarly, double-stack clearance is important to any railroad that aspires to offer intermodal container services. A lack of intermodal facilities in Indiana has been identified as a challenge by numerous stakeholders. All of Indiana’s primary corridors can accommodate double-stack containers,

and numerous double-stack trains already pass through the state, particularly along the east-west NS and CSX lines across the northern edge of Indiana, as well as the NS line west to St. Louis and Kansas City. If a new intermodal facility were to locate on a line owned by a regional or short line, double-stack clearance would be critical.

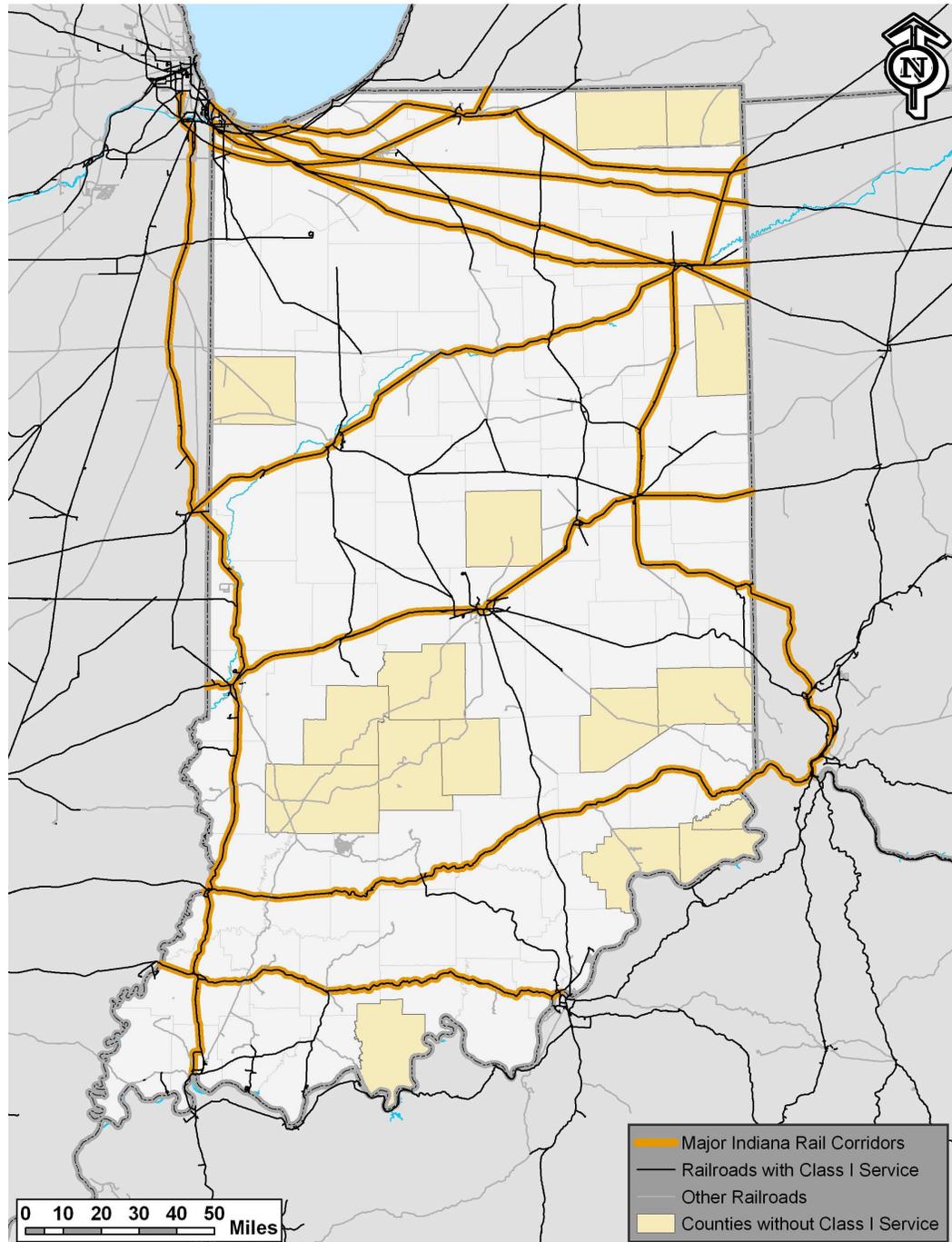
The 2002 Indiana Rail Plan identified three criteria for determining the level of “difficulty” that a short line will experience “meeting long-term maintenance needs without public investment.” These factors are (1) number of annual carloads carried per mile of track, 50 being the minimum threshold for long-term financial health; (2) 286,000-pound capability; and (3) the short line’s overall traffic trends, and whether their business is growing, declining, or remaining unchanged. As of that study’s publication, it was also estimated that the cost of 286,000-pound upgrades alone would approach \$100 million for the state’s short lines.

Industrial Rail Service Fund

The primary source of state assistance for infrastructure upgrades on short line railroads is the Industrial Rail Service Fund (IRSF), administered by INDOT. Established in its current form in 1997, the IRSF provides grants and low-interest loans to Class II and Class III railroads, as well as short lines operated by local port authorities. The IRSF is funded through 0.029% of the state sales tax. INDOT allocated grants totaling \$1.9 million in Fiscal Year 2007, and \$1.3 million in FY 2008. INDOT anticipates making \$1.7 million available in FY 2009. According to the IRSF FY 2009, 2008, and 2007 funding application documents, the goal of the program is to assist short lines to upgrade infrastructure to accommodate 286,000 pound rail cars, and to upgrade bridges and track to attract new businesses. In previous years, grants have focused on upgrading excepted track (limited to 10 miles per hour for freight, with passenger trains prohibited) and repairing bridges.⁴⁵

⁴⁵ *Industrial Rail Service Fund Grant Application Guidelines FY 2009*. Indiana Department of Transportation. Accessed December 8, 2008.
Available at <http://www.in.gov/indot/files/FY09IRSF.pdf>

Figure 7.3 Indiana Counties without Class I Rail Service



Source: *National Transportation Atlas Databases (NTAD) 2008*. U.S. DOT, Research and Innovative Technologies Administration's Bureau of Transportation Statistics.

Note: Class I service is defined by any line that is owned by a Class I railroad, or over which at least one Class I railroad has trackage rights.

7.4 HIGHWAY ACCESS TO MAJOR RAIL INTERMODAL FACILITIES

Access to major rail yards and rail/truck intermodal facilities is critical for the viability of intermodal transport in Indiana. Highway access roads to the NS Triple Crown facility in Fort Wayne and the Avon CSX facility in Indianapolis were designated as National Highway System (NHS) intermodal freight connectors of national significance.⁴⁶ U.S. 36, which connects the Avon CSX facility with I-465/I-74 in Indianapolis, is expected to be operating primarily between LOS D and F by 2030 (see Figure 6.3). Other intermodal access roads of national or state-wide significance are expected to operate at or above LOS C.

7.5 INDUSTRY-SPECIFIC RAIL GAPS AND NEEDS

Manufacturing

In an increasingly global economy, Indiana's manufacturing industries are shipping and receiving an ever-growing volume of goods and materials to and from overseas trading partners. The busiest gateways for foreign trade, particularly with Asian markets, are on the west coast. The Ports of Los Angeles and Long Beach alone handled nearly 40 percent of all containerized trade between the U.S. and foreign destinations in 2006.⁴⁷ Currently, goods transported by rail between Indiana and west coast ports must connect between eastern and western railroads, or more commonly, must be trucked to and from Illinois where they connect with western railroads. Both options become increasingly unpalatable as both highway and rail congestion around Chicago worsens. Two of Indiana's intermodal terminals offer shipping lanes to west coast ports: Evansville⁴⁸ and Remington.⁴⁹ However, both of these facilities are fairly small, offer infrequent service, and require interchanges in Chicago, making the cost advantage over trucking minimal, particularly in light of the disadvantage in transit time. CSX also began offering service in 2008 between the Port of Los Angeles and Avon and from Oakland to Avon. However, both of these services require a rubber-tire transfer in St. Louis. A direct rail link between Indiana and the west coast would be highly advantageous. Absent that, increased frequencies would make existing service more competitive.

⁴⁶NHS Intermodal Freight Connectors: Report to Congress, U.S. DOT, 2000.

⁴⁷ U.S. Army Corps of Engineers' Navigation Data Center. http://www.iwr.usace.army.mil/ndc/wcsc/by_porttons06.htm, accessed August 8, 2008.

⁴⁸ CSX Intermodal *International Service Matrix*, updated June 16, 2008.

⁴⁹ Indiana Rail Plan, 2002.

Mining and Mineral Extraction

The mining and mineral extraction sectors entail large volumes of bulk, low-value shipments, making these commodities traditionally strong candidates for movement by rail. Indiana's top trading partners for outgoing movements of stone, gravel, sand, and metals are its four neighboring states, which collectively accounted for 37 percent of total outbound tonnage of these commodities from Indiana in 2007. Overall, nearly 30 percent of raw minerals and metals shipped from Indiana to other states in 2007 were transported by rail, barge, or other intermodal modes (including combined truck and water shipments), nearly equal to the national average for interstate shipments of these commodities⁵⁰. If the mainline interstate rail corridors in Indiana reach capacity, as predicted by the AAR Study discussed in Chapter 3, shipments currently moving by rail may be shed in favor of higher value commodities, particularly intermodal and automobile shipments. This would threaten these important sectors of the Indiana economy.

Biofuels

As of the middle of 2008, there were seven ethanol plants operational in Indiana, six under construction, and four proposed. Six of the seven operating plants opened within the past two years. Upon completion, the six plants currently under construction will more than double the state's current ethanol production, which is expected to exceed 1.1 billion gallons by the end of 2009.⁵¹ The state also has five plants currently producing soy-based biodiesel, including the world's largest (as of its opening in 2007) in Claypool. Indiana's central location and ample crop production will continue to position the state as a favorable choice for siting such facilities, potentially driving demand for inbound corn and soy shipments from surrounding states. This, combined with increasing overseas demand for these grains, will also continue to increase demand for rail services, including short line and regional rail links to areas not served by primary lines. Figure 6.2 shows the locations of existing and proposed biofuels plants in Indiana. Nearly every existing and proposed facility is located along a Class I rail line. In addition, an ethanol plant is currently under construction on the grounds of the Port of Indiana at Mount Vernon. With an estimated annual production of 220 million gallons, this facility will be more than double the size of any other existing or planned ethanol plant in Indiana.

The sharp increase in biofuels production poses an additional strain to a Class I network that is already nearing capacity. The type of freight movements generated by a biofuels plant, particularly the demand for raw materials, may be less than ideal for the Class I operators due to the relatively short haul distance.

⁵⁰ FAF2 Provisional Commodity Origin-Destination Data: 2007.

⁵¹ Biofuels Indiana. <http://www.in.gov/isda/biofuels/>, accessed August 21, 2008.

These materials are usually carried in by truck, while biofuels themselves are shipped out by rail and truck.

In the face of capacity constraints these shipments may be at risk of being shed in favor of more profitable business such as long-haul, high-value intermodal trains. The result would be a shift to trucks, which would drive up the price of refined biofuels, or increased reliance on short line and regional railroads, whose challenges with regard to hauling bulk goods are documented earlier in this section. Growing demand for corn and soy as inputs to biofuel production underscores the economic importance of a robust network of short-line and regional railroads that can adequately support short-haul bulk goods transportation.

Bulk Agricultural Products

The value of Indiana agricultural exports reached \$2.1 billion in 2006 and has been growing substantially in recent years. Indiana's agricultural exports are the 10th highest in the nation. The state is the 5th ranking exporter of feed grains (includes corn) and is 4th in soybean exports. Indiana also is a top 10 exporter of poultry products, seeds, and live animals/meat. Freight access to the country's international gateways on the East, West, and Gulf coasts is crucial to the competitiveness of the state's agricultural exports.

Rail is important for shipping grains for export, but three distinct challenges face the agricultural sector in Indiana. First, shippers of bulk agricultural products face growing competition with the retail industry and coal/electric power industries for dwindling capacity on the national rail network. Transportation of manufactured goods has higher potential profit margins for the railroads, and the railroads have also invested heavily in coal transportation infrastructure in the Powder River Basin, so these commodities have some inherent competitive advantages over bulk agricultural goods in attracting interest from the railroads. In addition, a longstanding shortage of hopper cars threatens to constrain exports, particularly as the exploding ethanol and biodiesel industries drive increased overall grain consumption. This car shortage will disproportionately affect smaller producers without the resources to purchase their own equipment. Finally, the inability to accommodate industry-standard 286,000 pound-per-axle bulk commodity cars threatens the ability of short lines to provide competitive service to grain producers. This is particularly problematic in the 16 Indiana counties without Class I service. Without access to adequate rail service, agricultural shippers must shift to trucks, increasing their transportation costs and making them less competitive with major agricultural producers in Argentina, Australia, and Brazil. Additional spur lines, increased frequency, and additional assistance upgrading existing rail lines could help provide adequate rail service to these areas.

Coal

Indiana is the nation's second largest coal consumer, and consumption rates have steadily increased for decades. Coal is the number one commodity carried into the state by rail, and given current commodity prices it is likely to maintain its prominence in the state's energy mix in the face of rocketing oil and gas prices. Transport costs are an important component of coal-based electricity rates, and the capacity and cost of rail transportation to and through Indiana will directly influence electricity prices in the state. Currently, the state has relatively low electricity costs, a benefit to the state's industrial sectors and its residents. Coal is also an important input to the state's steel industry, as coal-derived coke is used in blast furnaces to produce steel. Much of this coke is produced in Indiana plants.

If coal remains a major energy source in Indiana, a likely scenario, there will be a greater need to improve the rail network to the state's mines, concentrated primarily in southwestern Indiana. The "last mile problem" is a term describing the disconnect between major rail corridors in Indiana and the state's coal mines, whereby it is often more economical for coal customers, particularly those in the northern part of the state, to import fuel from as far away as Wyoming and West Virginia, rather than from Indiana mines.

According to the Energy Information Administration, over half of the intrastate coal movements in Indiana, by weight, traveled by truck. A May 2007 study published by the Center for Coal Technology Research at Purdue University recommended the development of an "Indiana Coal Corridor"⁵² (see Figure 6.1). The proposed corridor does not call for any new infrastructure investment, only the designation of a quasigovernmental body that would negotiate and obtain trackage rights in order to act as a single end-to-end operator, connecting southern coal mines with northern power plants, mainline railroads, and ports. Such an entity would seek to increase the share of Indiana coal used in the state's power plants, and also position the state to increase coal exports through its Great Lakes and Ohio River ports. Constraints in the transportation network are a primary inhibitor of greater coal extraction and exporting in Indiana. According to the Indiana Geologic Survey, based on current consumption levels and existing extraction technology the state has a 500-year supply of coal.⁵³

⁵² Thomas F. Brady and Chad M. Pfitzer. *A Prescriptive Analysis of the Indiana Coal Transportation Infrastructure*. Center for Coal Technology Research, Purdue University, May 2007.

⁵³ "Coal in Indiana." Indiana Geologic Survey, <http://igs.indiana.edu/coal/index.cfm>, accessed August 26, 2008.

7.6 PASSENGER RAIL

Intercity Passenger Rail

Amtrak currently offers daily service between Chicago and Indianapolis, extending to Washington, DC and New York City three days per week. In addition, five routes pass through northern Indiana, three of which connect between Chicago and points in Michigan, and two of which connect to points east, including Cleveland, Pittsburgh, New York, Washington, and Boston.

In the absence of a state-supported rail initiative, the most likely scenario would be a continuation of existing Amtrak services in Indiana (the routes that pass through Indiana between Chicago and Michigan are already supported by the State of Michigan, however). Two proposed multi-state high-speed rail initiatives would have significant impacts on passenger rail services in Indiana: The Midwest Regional Rail System (MWRRS) and the Ohio Hub System. Both would require substantial state support.

The proposed MWRRS came out of the Midwest Regional Rail Initiative, an ongoing effort to improve rail service in the Midwest, sponsored by the transportation agencies from the states of Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin. The proposal includes new or upgraded routes classified into three tiers, corresponding to maximum operating speeds of 110 mph, 90 mph, and 79 mph. Three proposed routes would serve Indiana, all of them originating in Chicago and all in the 110 mph tier. The three routes would connect to: Cincinnati (via Indianapolis), Cleveland (via Fort Wayne or South Bend and Toledo), and Detroit (via Kalamazoo). These three routes are estimated to require a total capital investment of just over \$3 billion, with the Indiana portions costing an average of approximately \$1 million per mile. Figure 6.22 shows potential MWRRS route alignments in Indiana. The proposed routes would likely utilize a combination of short line, regional, and Class I trackage. Both of the alternative Chicago - Cleveland alignments involve primary east-west corridors that are expected to face severe capacity constraints, according to the AAR Study. This may result in higher than expected capital costs, if significant capacity expansion becomes necessary.

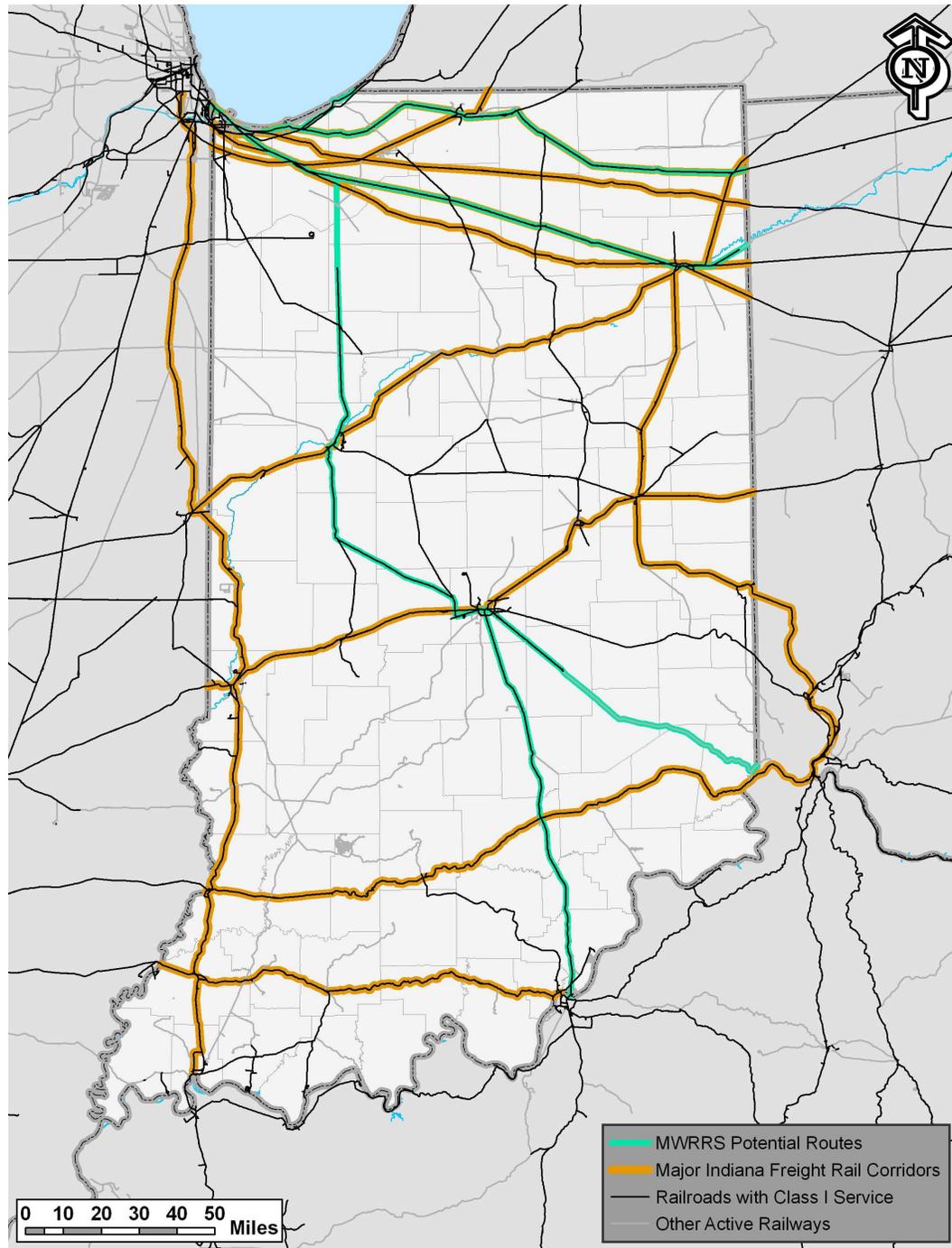
Financing the MWRRS would likely involve federal assistance, probably in the form of matching funds. Due to the nature of the system, multistate cost-sharing agreements would be imperative, and would probably be more complicated than each state simply paying for its share of the infrastructure. For example, the majority of the track-miles on the Chicago-to-Cincinnati route are in Indiana, but the route would likely attract a disproportionate number of Ohio and Illinois residents and require appropriate support from those states. The 2009 American Recovery and Reinvestment Act (ARRA) dedicates \$8 billion for capital assistance for high speed rail corridors and intercity passenger rail service, to be allocated to states based on applications through 2012. Another \$1.3 billion is

slated for Amtrak. The Administration's budget plans also call for an additional \$1 billion per year over the next five years for high-speed rail.

In addition to the routes proposed as part of the MWRRS, INDOT is also studying rail service along the Indianapolis - Louisville corridor, a former Amtrak route. This corridor would complement the existing MWRRS, branching off of the Chicago - Indianapolis - Cincinnati route south of Indianapolis, as shown in Figure 7.4.

The Ohio Hub is a separate high-speed rail initiative, developed by the state of Ohio, involving four proposed routes radiating from Cleveland. While none of these corridors passes through Indiana directly, the Cleveland - Cincinnati route would connect to the Chicago - Indianapolis - Cincinnati segment of the MWRRS, and the Cleveland - Toledo - Detroit route would connect to the Chicago - Toledo - Cleveland and Chicago - Detroit segments of the MWRRS. Each of these MWRRS routes passes through Indiana, and by interconnecting the Ohio Hub and MWRRS, economies of scale and increased ridership will be generated for both systems. The mutual benefits of the MWRRS and Ohio Hub, particularly to the states of Indiana and Ohio, suggest possible planning and financing synergies and reinforce the need for multistate cooperation in intercity rail planning.

Figure 7.4 Midwest Regional Rail System (MWRRS) Proposed Routes in Indiana



Source: *National Transportation Atlas Databases (NTAD) 2008*. U.S. DOT, Research and Innovative Technologies Administration's Bureau of Transportation Statistics.

Note: Specific MWRRS route alignments are for illustrative purposes only and are subject to change.

Commuter Rail

There is growing interest in commuter rail in Indiana. Two bills have been introduced in the 2008 session of the Indiana General Assembly related to funding for public transportation investments. House Bill 1220 proposes to require the Commission on State Tax and Financing Policy to study state and local funding alternatives for the NICTD West Lake extension project. One option under consideration involves designating a portion of the sales tax collected in Lake and Porter counties in northwest Indiana to fund the project. Northwest Indiana is also exploring options for funding coordinated regional transit services under the recently established Regional Bus Authority (RBA).

House Bill 1245 proposes to divert a portion of the county option income tax revenue in Indianapolis/Marion County to assist in the development of the Central Indiana Regional Transportation Authority (CIRTA). CIRTA was established in 2005 to implement rapid transit in the nine-county region surrounding Indianapolis. The bill also proposes allowing CIRTA to establish a transit development district to improve transportation infrastructure by capturing a part of the sales taxes collected in the district.

Currently, the South Shore Line between Chicago and South Bend is the only active commuter rail line in Indiana. However, a proposed branch extension of the South Shore Line and several proposed transit projects in and around Indianapolis have the potential to greatly expand the role of commuter rail in regional commuting patterns in Indiana.

The NICTD West Lake Corridor Extension includes two proposed branches of the South Shore Line that would diverge from the existing route in Hammond, Indiana, and proceed southeast to the cities of Lowell and/or Valparaiso. The ongoing study of this proposal has not yet produced cost estimates for any of the four preliminary project alternatives, although it is assumed that any proposal would be contingent upon Federal Transit Administration (FTA) New Starts funding. However, significant local and state resources would be required as well.

Two studies are evaluating potential rail service around Indianapolis. *Directions*, a study initiated by the Indianapolis Metropolitan Planning Organization in 2002, identified seven corridors radiating from Indianapolis that have the potential for some form of fixed guideway transit service. Phase III of the study, currently underway, involves further analysis of the Northeast Corridor, the likely “starter system.” A Locally Preferred Alternative alignment was recommended by MPO staff in April 2008, and next steps would include a Draft Environmental Impact Statement (DEIS) and a FTA New Starts funding application. Costs and funding options have not been indicated at this time.

In a move that may impact the results of the *Directions* study, state legislation passed in 2007 required INDOT to study the feasibility of a commuter rail line linking Bloomington, Indianapolis, and Muncie, with possible stops in Anderson, Noblesville, and Fisher depending on the preferred alignment. The August 2008

final report resulting from that study identified multiple alignment alternatives and recommended several for further analysis. Recommended segments northbound from Indianapolis to Muncie and southbound from Indianapolis to Bloomington could cost between \$600 million and \$700 million. The recommended northbound alignment would serve as an extension of the proposed Northeast Corridor, so future planning exercises should consider the two in tandem.⁵⁴

Impact of Passenger Rail Expansion on Freight Rail

All of the proposed rail projects in Indiana – the MWRRS and the multiple commuter rail proposals – would travel over existing freight lines. Several of these, particularly those across northern Indiana, are already heavily used and approaching capacity. The railroad LOS forecasts in the AAR Study, discussed in Chapter 3, assumed no change in passenger rail traffic, and any increase in passenger trains would have to compete for capacity with freight trains, thus exacerbating the capacity constraints seen in Figure 3.25. One site in particular poses a potential conflict. Currently, a substantial number of freight trains pass through Union Station in Indianapolis. If a large number of new passenger trains were to begin using the station, temporal separation or outright diversion of freight traffic from Union Station may be necessary. The Indianapolis rail network offers an opportunity to relocate at least some freight traffic to the former Indianapolis Union Railway & Belt Railroad (now CSX) around downtown Indianapolis. However, any significant increase of traffic on this route would likely require infrastructure upgrades.

7.7 MAJOR OUT OF STATE RAIL ISSUES

CREATE Program (Illinois)

The capacity and efficiency of the Chicago rail network has significant implications for freight transportation in Indiana. Its continued vitality would signal major growth in shipments radiating to and from that region. Conversely, continued degradation of railroad LOS around Chicago would likely result in a diversion of shipments between Indiana and points west to other modes or other routes.

The Chicago Region Environmental and Transportation Efficiency (CREATE) Program is a partnership between the City of Chicago, the State of Illinois, six Class I railroads, Amtrak, and Metra (Chicago’s commuter railroad) to improve the current efficiency and future capacity of the rail network in and around the City of Chicago. The program bills itself as a “project of national significance” in

⁵⁴ Final Report: Central Indiana Commuter Rail Feasibility Study. Indiana Department of Transportation, August 2008.

light of the fact that nearly one-third of all rail shipments in the United States pass through the project area. In total, 78 projects worth \$1.5 billion are proposed, including 25 road-rail grade separations, 6 rail-rail grade separations, and numerous improvements to viaducts, grade crossings, switches, tracks, and signals. The railroads (including Metra) have committed \$232 million to the project, and the remainder will need to come from federal, state, and local sources. According to the CREATE website, as of 2007 \$130 million in federal and local funds have gone into the project, along with \$100 million in private funding. The future of CREATE will depend heavily on support from the State of Illinois as well as the U.S. DOT, which is beginning the federal transportation reauthorization process in 2009.

Ohio Bottleneck and Clearance Issues

Because the majority of major rail corridors in Indiana are east-west lines, Ohio's rail network is second only to Illinois in its importance as a connection to railroads in Indiana. Several recent studies have identified rail needs in Ohio that are of importance to freight transportation in Indiana.

In September 2007, the Ohio Department of Transportation (ODOT) released the *Ohio Freight Rail Choke Point Study*. That study identified, scored, and ranked 44 choke point locations on the Ohio rail network. Of these, the top three most "severe" all impact the north-south NS line that passes through Cincinnati, which is also one of the two major north-south rail lines passing through Indiana and a crucial link in the Chicago-Cincinnati rail corridor. These three choke points are described in Table 7.2 and shown in Figure 7.5.

Table 7.2 Ohio Choke Points Affecting the Indiana Rail Network

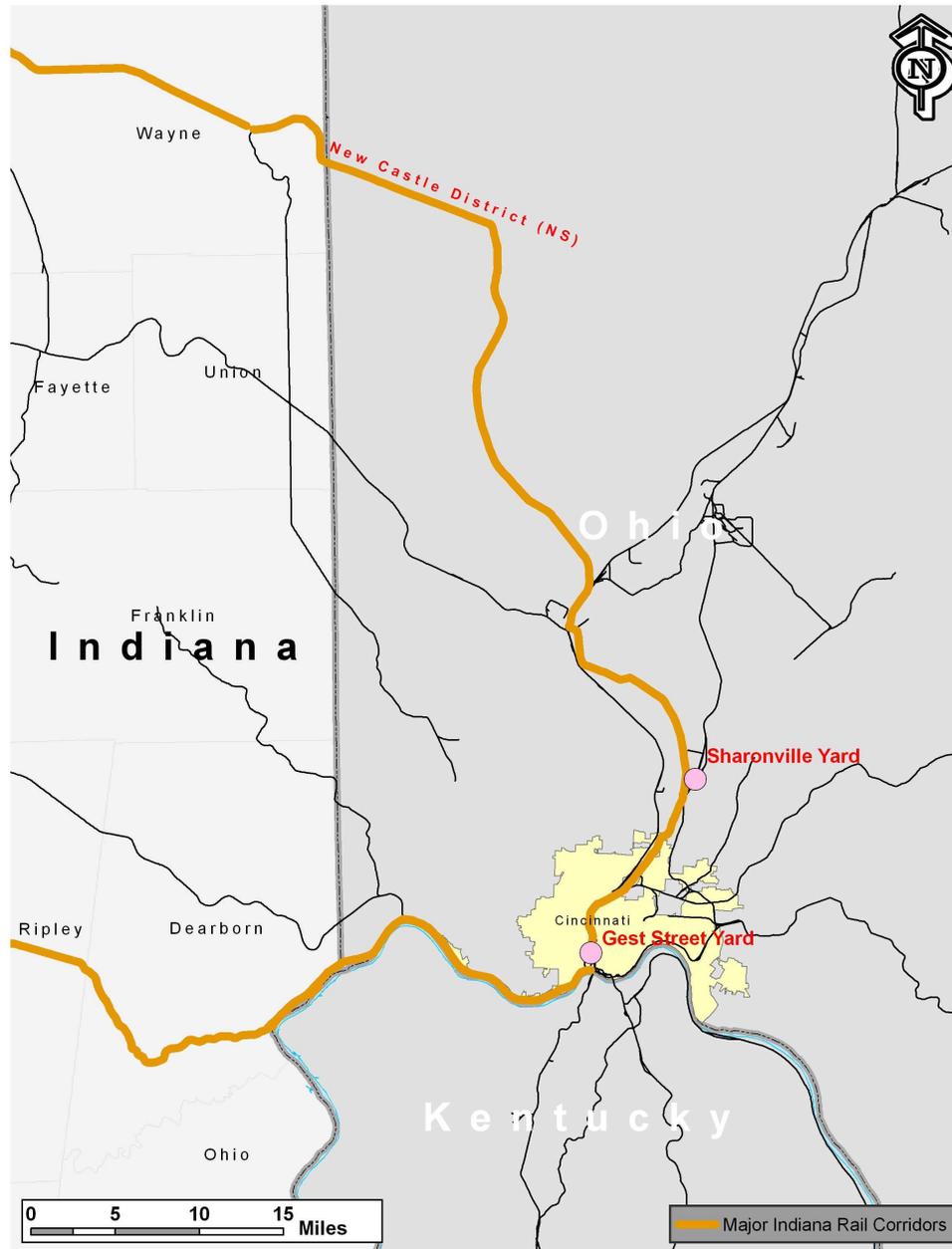
| Ohio Statewide Severity Rank | Choke Point Name / Description | Improvements Needed |
|------------------------------|---|--|
| 1 | New Castle District (Mainline connecting New Castle, IN with Cincinnati, OH) | Immediate need is new and extended sidings, and siding track improvements. Eventually, connection to Sharonville Yard (Cincinnati), double-tracking. |
| 2 | North end of Gest Street Yard, Cincinnati | Addition of new switches and crossovers, and a second main line north of the yard. |
| 3 | Sharonville and Gest Street Yards, Cincinnati (switching and intermodal capacity constraints) | Immediate solution is a grade separation project. Eventually, expansion of the existing facility or construction of a new intermodal terminal. |

Source: Ohio Freight Rail Choke Point Study, September 2007.

The cost to correct these three choke points alone is estimated at around \$32 million. According to the study, these corrections would also return among the highest value to the state, the railroads, and Ohio shippers, among any choke points in Ohio. Because of their location, relieving these bottlenecks would also benefit shippers and receivers in Indiana.

In addition to rail choke points, double-stack clearance is also an issue on at least one Cincinnati area rail line. The Ohio - Kentucky - Indiana (OKI) Regional Council of Governments' *2030 Regional Transportation Plan* (2008 update) identified double-stack clearance as an issue facing the Cincinnati region. While the most heavily utilized mainlines passing through Cincinnati (the north-south NS line and the east-west CSX line) can accommodate double-stacked container trains, a potentially significant line linking Columbus with Cincinnati cannot. This NS line has six overpasses that do not clear double-stack trains, and two of these overpasses are in the OKI region. According to the OKI plan, NS reports that "an estimated 80,000 to 105,000 truck loads can be diverted annually from the roadways" if this line is improved.

Figure 7.5 Cincinnati Area Rail Choke Points



Source: *National Transportation Atlas Databases (NTAD) 2008*. U.S. DOT, Research and Innovative Technologies Administration’s Bureau of Transportation Statistics.

7.8 POLICY GAPS, NEEDS, AND RECOMMENDATIONS

The descriptions of the organizational and resource issues above, as well as specific mandates, paint a picture of public sector involvement in freight planning in the State of Indiana. The ongoing stakeholder outreach through this study, as

well as comparison to state-of-the-practice planning efforts elsewhere, help to identify where within the current policy framework gaps and needs exist, and what strategies could be implemented to bridge those gaps.

Seven Key Elements of Successful Freight Planning

According to NCHRP Report 594: *Guidebook for Integrating Freight into Transportation Planning and Project Selection Processes*, successful freight planning is defined by seven key elements. The study used 23 freight case studies, which were dissected to derive optimal freight policies, practices, and processes. The approach in identifying the 7 key planning elements was to focus on: 1) integrating freight issues into established planning and programming processes; 2) building on and supporting the existing body of freight planning guidance; 3) providing flexibility; 4) effectively using best practices; and 5) providing guidelines that can evolve and grow as freight considerations are mainstreamed. The seven key principles identified for successful freight planning are:

1. Establishment of a freight technical lead;
2. Understanding the statewide freight system;
3. Linking freight planning and the transportation planning and programming process;
4. Understanding freight data needs;
5. Conducting effective outreach to stakeholders;
6. Participating in freight training and education; and
7. Advocating for freight planning.

Indiana's policy gaps and needs as related to each of these areas, as well as recommendations, are discussed below. Many of these policy gaps, needs, and recommendations address issues and policy areas discussed in Chapter 5.

Freight Technical Lead

Indiana is advanced in its treatment of freight in the planning process relative to other states. It has established a dedicated freight office, the Office of Freight Mobility, and has undertaken several freight transportation studies. The freight technical lead heads up coordination of freight planning among various DOT offices and with external organizations, including MPOs and economic development agencies.

Recommendation:

1. Given that just one person is dedicated full time to freight, it will be critical to continue to draw on the resources of planners in the long-range planning department and other divisions as needed. Potentially, additional dedicated freight staff will be required, particularly given the need to coordinate with MPOs and economic development agencies throughout the State.

Freight Planning Link to Transportation Planning and Programming

With the dedicated freight office and a director to oversee integration of transportation planning, the organizational structure exists for freight to continue to receive focus as part of long-range planning and programming activities. The Major Moves plan explicitly considered economic development as a major factor for future transportation projects, which incorporates freight needs in many respects.

The level of freight planning varies significantly among MPOs. While in many MPOs, especially small organizations, designation of a planner dedicated exclusively to freight may not be possible, it is important to ensure that freight is considered within the MPO. At a minimum, one staff person should serve as a point person for freight issues, even if only working on freight part time. A dedicated freight focus is necessary to ensure that project development and prioritization considers freight. When MPOs recommend projects for the STIP, if they have not been evaluating projects for freight benefits or systematically considering freight improvements, they will recommend few freight projects, as is currently the case with many Indiana MPOs.

Recommendations:

1. Work to boost understanding and consideration of freight by MPOs. For example, the State can work with MPOs to ensure that regional performance measures incorporate freight so that freight impacts can be evaluated during project prioritization. Additionally, Indiana MPOs should be encouraged to include freight elements to the project prioritization process so that a larger number of projects beneficial to freight will be considered in the planning process.
2. Encourage formation of the proposed MPO Council Freight Committee. Support the Freight Committee in sharing best practices by other MPOs on how to incorporate freight into project identification and prioritization processes.
3. Develop mechanisms for ongoing communications with private shippers and carriers. Educate shippers and carriers on the planning process and solicit information on freight needs and deficiencies. Reach out to shippers and carriers to promote attendance at public meetings on project programming. The existence of a freight designated point of contact with a background in the trucking industry is a great strength on which to capitalize.
4. Work with the INDOT long-range planning office to improve processes for monitoring of industry and major land use developments throughout the State that affect freight, such as development at interchanges and major corporate start-ups and relocations. INDOT also can provide support to MPOs to ensure that they are considering freight adequately in their land use planning.
5. INDOT should develop methods for calculating public benefits for freight investment, such as employment creation, increased property tax revenue,

increases in property values, increases in average wage rates, and regional economic benefits. INDOT should identify the benefits that are most important to each stakeholder group and ensure that information about those benefits is communicated to that audience, including elected officials, the public, and business leadership.

Indiana Freight Data

The Indiana University Transportation Research Center has developed a Commodity Flow Model Survey for INDOT that assigns freight movements to statewide highway facilities. This data source is used in the statewide travel demand model to estimate truck trips. Additionally, Indiana has access to nationally available surface transportation freight data provided by U.S. DOT, such as Freight Analysis Framework data and rail waybill sample data, and participates in other national data reporting systems, such as the Highway Performance Monitoring System (HPMS).

In addition to the above freight data sources, the INDOT Office of Systems Analysis and Planning also oversees several asset management systems, including:

- Pavement Management System;
- Bridge Management System;
- Congestion Management System;
- Safety Management Systems; and
- Intermodal Management System.

Recommendations:

1. The Office of Freight Mobility should work with other divisions to ensure that system analysis processes regularly identify freight impacts of system deficiencies. A system should be in place to alert the Office of Freight Mobility when an operations deficiency affecting freight movement is identified.
2. INDOT should continue to regularly update its commodity flow model. This data potentially can be used for other types of analysis such as county-level freight flows.
3. INDOT should continually evaluate freight data needs by MPOs and regional planning agencies, which INDOT may be able to support through centralized data management.
4. INDOT district offices should solicit input on regional conditions related to freight. For example, MPOs work with district offices on making freight improvements and have local knowledge of freight issues that can be useful for statewide planning.

Freight Stakeholder Outreach

INDOT regularly participates in freight forums such as the annual Logistics Council meeting and meetings of Purdue's Regional University Transportation Center, which includes shippers and carriers. INDOT can boost awareness by the freight community of ways to participate in the planning process and encourage private sector input by fostering contact between the private sector and the Office of Freight Mobility. INDOT should continue to increase its leadership role in developing relationships with shippers and carriers and provide support to MPOs that do not have the resources to do so directly.

A number of MPO stakeholders expressed interest in INDOT's working relationship with its district offices and, in turn, with cities and MPOs. Since the MPOs work primarily with the district offices, it is important that the districts and the central office have adequate communication on freight issues. In particular, smaller MPOs with limited staff hoped to see increased leverage in INDOT district offices, resulting in more attention to local and regional freight issues. There is a desire among these MPOs for increased planning guidance and cooperation with INDOT. Several MPO stakeholders also indicated that more consistency between INDOT district boundaries and local and regional jurisdictional boundaries would improve regional planning efforts within the state. For example, the Indianapolis metropolitan area currently falls within three different INDOT districts.

Recommendations:

1. INDOT should expand outreach to shippers and carriers, particularly as part of the ongoing planning process. During INDOT's long-range plan update cycle, freight-specific "listening sessions" should be conducted across the State to educate freight stakeholders on the transportation planning process and gather input on specific needs of freight users. Whenever possible, examples of new projects and changes to the process resulting from freight stakeholder input should be showcased. Because the freight community includes private sector companies, to maintain participation it will be critical to demonstrate that their participation results in transportation system improvements of value to them.
2. Additional outreach to shippers and carriers should be conducted via attendance at industry events and relationship development with specific corporations in the region. Because freight planning benefits from significant private-sector involvement, innovative and proactive outreach may be required given the business commitments of stakeholders. INDOT freight representatives should consider conducting meetings at locations convenient to shippers and carriers, potentially at their offices.
3. INDOT should consider development of freight communications vehicles, such as a freight listserv that would send out alerts to carriers and dispatchers with real-time information on crashes, weather conditions, closures, or other information. This service could recommend alternate routes when an

incident blocks a major roadway and help manage congestion when incidents occur.

4. INDOT should support regional economic development agencies in their promotion of freight assets to developers, providing data on transportation infrastructure, connectivity, and state commitment (e.g., Major Moves) to demonstrate that potential investors can count on a well-maintained system and state responsiveness to transportation user needs. In addition, INDOT may help foster connections between developers and freight providers, identifying key opportunity areas for mutually beneficial relationships; continue to improve data and communications demonstrating transportation benefits offered by Indiana as distinguished from other locations; highlight the transportation benefits that make Indiana attractive for business location, including proximity to large markets such as Chicago and well maintained infrastructure; and promote the 2007 phasing out of the state tax on inventory, which was a barrier to freight business location, particularly intermodal facilities.
5. The INDOT web site should be evaluated for enhancements to freight information. Potentially, public information for all modes including rail and marine could be grouped on the freight page (<http://freightmobility.in.gov>) with links to other divisions. Information needs should be solicited from carriers to enhance the web site to respond to their needs.
6. INDOT should support MPOs and other regional agencies in coordinating potential freight developments between jurisdictions, promoting the state and regional benefits of the facilities, and avoiding jurisdictional conflicts that could delay or prevent intermodal development activity.
7. INDOT should encourage formation of the proposed MPO Council Freight Committee and support the Committee in sharing best practices by other MPOs on how to incorporate freight into project identification and prioritization processes.

Training and Education

Additional training and education on freight planning is needed for MPOs and can be coordinated once a new MPO Council Freight Committee is established or through other means. Additionally, INDOT should monitor and support the educational offerings in transportation and logistics to ensure that industry needs are being met.

In the long term, INDOT or other State agencies should consider taking an active role in ensuring a vital workforce in the future, as trucking is a major industry in Indiana and a crucial component of many of the State's other key industry sectors. Numerous shipper and carrier stakeholders have lauded Ivy Tech's continued role in workforce development in Indiana.

Recommendations:

1. INDOT should promote to MPOs and other planning agencies participation in existing, free training programs such as the U.S. DOT's free monthly webinar "Talking Freight." Additionally, FHWA offers a Freight Professional Development program to assist DOTs and MPOs in developing skills and knowledge in freight planning and operations.
2. Additionally, INDOT should develop and lead similar programs such as courses on state-specific freight information, including information on state freight data available for MPOs and best practices in MPO freight planning.
3. INDOT should monitor logistics industry workforce needs and whether sufficient education and training exists to meet these needs. Too often educational institutions develop programs based on their perception of industry needs without sufficient involvement of employers who would hire graduates of these programs. This should include working with higher education institutions and employers to ensure that education programs respond to actual industry needs and not perceived needs.

Advocacy

The importance of freight to national commerce and to economic competitiveness has recently received increased attention from national agencies and organizations, including the Surface Transportation Policy and Revenue Study Commission and the U.S. Chamber of Commerce. INDOT should continue its work to ensure that agencies and organizations throughout the State realize the opportunities that freight movement provides to Indiana and its role in national economic competitiveness. Additionally, to gain support of freight initiatives by the public, INDOT should work to improve understanding of the benefits of freight.

Recommendations:

1. INDOT does have a description of "Benefits of the Railroad Industry" on the railroad section of the web site but could expand this information to promote the benefits of all freight modes more broadly on the freight section of the web site. This also could be achieved by partnering with economic development agencies to develop content for their web sites and linking to them.
2. To increase public support of freight projects, INDOT should develop methods for calculating public benefits for freight investment, such as job creation, property tax revenue increases, increases in property values, increases in average wage rates, and regional economic benefits. INDOT should identify the benefits that are most important to each stakeholder group and ensure that information about those benefits is communicated to the appropriate audiences, including elected officials, the public, and business leadership.
3. As Federal and state transportation officials conduct legislative outreach to learn more about freight and its impact, INDOT should take advantage of

opportunities to share its views on the importance of freight to Indiana's economy.

Other Critical Policy Areas

Safety

Every time an incident occurs involving a heavy truck or train resulting in fatalities or injuries or causing a major traffic backup, public support for increased freight movement erodes. It is critical that the freight users of the transportation system do so in a safe and law-abiding manner to ensure that Indiana's residents are safe, and that transportation assets are well managed. The Strategic Highway Safety Plan (SHSP) recommends continuation of Operation Lifesaver and that 80 highway-rail grade crossings be improved per year via the Highway-Rail Hazard Elimination Program. Currently 30 to 35 are improved per year by INDOT.

Recommendations:

1. While INDOT is not identified in the SHSP as a lead agency in implementing some of these enforcement, education, and data management programs, INDOT's Office of Freight Mobility should monitor progress on safety initiatives identified in the SHSP related to freight.

Funding

Because significant amounts of freight pass through Indiana, the State seeks to ensure that transportation capacity is sufficient, mitigate impacts, and capitalize on freight economic development opportunities. To improve and develop additional freight facilities additional funding sources are needed.

Recommendations:

1. INDOT should communicate support of dedicated freight and metropolitan congestion relief programs as recommended in the National Surface Transportation Policy and Revenue Study Commission report. This proposed realignment of current Federal transportation programs has the potential to provide additional funding benefiting freight movement and congestion relief in metropolitan areas.
2. Aggressively pursue Federal funding programs that can be used to support freight investments.
3. Participate in a state legislative "Freight Day," potentially organized by a freight advocacy organization to highlight infrastructure investment opportunities and benefits. Outreach to state and Federal elected officials in the form of a legislative "Freight Day" can communicate the importance of freight to the region and help the State seek Federal support of freight policies and projects.

4. Evaluate incentive and funding programs for freight in other states and consider developing new or modifying existing freight programs in Indiana. Indiana should consider legislation to provide state tax relief for private freight transportation infrastructure such as intermodal facilities, rail infrastructure, waterway docks, distribution park roadways, and air freight handling facilities.
5. Continue to pursue public/private partnerships.

Multimodal and Intermodal Considerations

Comprehensive freight planning must consider all transportation modes including rail, water, and air, as well as highways. In most cases transportation efficiency via other modes is affected by integration with the roadway network, given that the “last mile” of the trip is usually via truck. Rail and water modes can take pressure off the highway system and present efficient and environmentally friendly alternatives to truck transport.

Recommendation:

1. Given INDOT’s current emphasis on roadway infrastructure, Indiana may wish to pursue state legislation to expand INDOT’s oversight, management, and support of other modes. Stronger organizational support can strengthen planning and project development efforts for other modes, resulting in a stronger transportation system overall. Efforts by other state DOTs to more fully integrate multiple transportation modes include development of an office of intermodal planning overseeing all modes other than highway (Mississippi), housing commercial vehicle enforcement within the DOT (Mississippi and Minnesota), and establishing a rail development commission (ORDC) as an independent commission within the DOT (Ohio).
2. Recently evaluated projects and corridors can be reevaluated with a broader look at multimodal and intermodal opportunities. The Indiana Commerce Connector, for example, was studied with the intention of enhancing mobility, providing congestion relief, enhancing safety, and being a catalyst for economic development. This project also has potential to integrate with other long-range transportation projects, such as the I-70 dedicated truck lanes and the I-69 corridor, and could provide potential connectivity to a new rail intermodal facility in central Indiana. Further, the corridor could be utilized for mass transportation.
3. The former Indianapolis Union Railway & Belt Railroad (now CSX) around downtown Indianapolis provides a unique opportunity to reestablish Indianapolis Union Station as the state’s main passenger transportation hub. The MWRRS and several proposed regional or commuter rail lines converge on this historic facility. However, the double-track freight mainline through Union Station limits the capacity available for increased passenger service. Freight traffic is also seen as an increasingly incompatible use as downtown Indianapolis develops as a regional commercial, entertainment, and

residential center. It is recommended that INDOT and Indianapolis stakeholder agencies explore in more detail the costs and benefits of improving the Belt as a through freight corridor and associated improvements at and around Union Station.

8.0 Funding

Currently few Federal funding programs are dedicated to freight infrastructure; however, sources for highway improvements can be used to benefit trucks as well as personal automobiles. Federal transportation funding programs and financing tools are generally of four types as described below. Additional non-DOT Federal programs may also be a resource for financing freight improvements. These opportunities are summarized in Table 8.1.

1. **Federal Formula Grant Programs** - These are generally allocated by formula to states and/or localities for specified purposes. To be used at the discretion of states and localities for various eligible passenger and freight projects, this program typically focuses on the highway mode.
2. **Special Funding Programs** - Special funding programs target specific goals and objectives with specific eligibility criteria.
3. **Discretionary Programs** - Discretionary programs are administered by U.S. DOT or other designated agencies with projects selected annually based on certain criteria specified by law. Such programs are often subject to earmarking by Congressional committees.
4. **Innovative Financing Tools** - These tools include loans, credit enhancement, and tax exempt financing programs that allow state and local governments, and in some cases private entities, to leverage various public or private revenue streams to help advance major projects.
5. **Other Non-DOT Programs** - These include programs managed by other Federal agencies that can be applied to freight improvements, as well as public-private partnerships.

Table 8.1 Funding Opportunities

| Type of Program | Funding Program | Eligibility | Agency Approving Funding |
|--------------------------------|---|---|--------------------------|
| Federal Formula Grant Programs | National Highway System (Title 23 USC Section 103) | Improvements on designated highway intermodal connectors to intermodal facilities and on NHS system. | INDOT |
| | Surface Transportation Program (Title 23 USC Section 133) | Projects on any Federal-aid highway, bridge projects on any public road, transit capital projects, and other state or local projects. Can be used for improvements to accommodate rail freight. | INDOT/MPOs |
| Special Funding Programs | Congestion Mitigation and Air Quality (CMAQ) Funds (Title 23 USC Section 149) | Projects that improve air quality by reducing transportation-related emissions in nonattainment and maintenance areas. Can be used to reduce truck, locomotive, or other emissions. | INDOT/MPOs |
| | Highway Bridge Program (Title 23 USC Section 144) | Replacement, rehabilitation, or preventive maintenance on bridges. | INDOT |
| | Rail-Highway Grade Crossings (Title 23 USC Section 130) | Elimination of hazards and installation/upgrade of protective devices at grade crossings. | INDOT/MPOs |
| | Truck Parking Facilities (SAFETEA-LU Section 1305) | New or expanded commercial vehicle facilities. | U.S. DOT/FHWA |
| | Federal Transit Administration Fixed Guideway Modernization Program (Title 49 USC Section 5309) | Improvements to passenger rail systems aged seven years or greater. | Transit Agencies |
| | Capital Grants for Rail Line Relocation (SAFETEA-LU Section 9002) | Rail line relocation and improvement projects. | U.S. DOT/FHWA |
| Discretionary Programs | Transportation, Community, and System Preservation Program (TCSP) (SAFETEA-LU Section 1117) | Projects to integrate transportation, community, and system preservation plans. | U.S. DOT |
| Innovative Financing Tools | Transportation Infrastructure Finance and Innovation Act (TIFIA) (Section 1601) | Loans and credit assistance for major transportation investments of national or regional significance, including public intermodal freight facilities. Private rail projects are eligible. | U.S. DOT |
| | State Infrastructure Banks (SIB) (Section 1602) | Infrastructure revolving funds that can be capitalized with Federal transportation funds. | INDOT/SIB Board |
| | Rail Rehabilitation and Improvement Financing (RRIF) (SAFETEA-LU Section 9003) | Loans and credit assistance to both public and private sponsors of rail and intermodal projects. | U.S. DOT/FRA |

| Type of Program | Funding Program | Eligibility | Agency Approving Funding |
|--------------------------|---|---|--|
| | Private Activity Bonds (SAFETEA-LU Section 11142) | Tax-exempt private activity bonds for highway and freight transfer facilities. Private sponsors are eligible. | U.S. DOT |
| | GARVEE Bonds (Title 23 USC Section 122) | Financing instrument that allows state to issue debt backed by future Federal-aid highway grant revenues. | INDOT/Local Government willing to dedicate future grant revenues |
| Non-DOT Funding Programs | Economic Development Administration Funds (U.S. Department of Commerce) | Projects that promote job creation/retention in economically distressed areas that are located within an EDA designated redevelopment area. | U.S. DOC |
| | Environmental Protection Agency (EPA) Brownfield Revitalization Program | Grants for brownfield cleanup. | USEPA |
| | U.S. Army Corps of Engineers (USACE) – Harbor Maintenance Trust Fund | Funding for operations and maintenance of Federally authorized channels for commercial navigation. | USACE |

Source: Financing Freight Improvements, FHWA, 2007.

Following is a discussion of each of the SAFETEA-LU-authorized programs listed above, followed by a discussion of non-DOT Federal programs.

8.1 FEDERAL FORMULA GRANT PROGRAMS

National Highway System

The National Highway System (NHS) Grant Program (Title 23 USC Section 103) funds transportation improvements on the NHS, which is comprised of the following five subsystems of roadways:

1. Interstates;
2. Other Principal Arterials;
3. Strategic Highway Network (StraHNet);
4. Major strategic highway connectors providing access between major military installations and StraHNet; and
5. Intermodal connectors.

The NHS program provides funding for roadways designated as part of the NHS, including intermodal connectors between the NHS and intermodal terminals. Eligible activities include construction, reconstruction, resurfacing, and rehabilitation on roadways connecting the NHS with truck-rail facilities, ports, pipeline terminals, or airports. The Federal share of NHS funding is

80 percent. When funds are used for interstate projects to add high-occupancy vehicle or auxiliary lanes, but not other lanes, the Federal share may be 90 percent.

Surface Transportation Program (STP)

The STP Program (Title 23 USC Section 133, 104(b)(3), 140) provides flexible funding for projects on any Federal-aid highway, bridges on public roads, transit capital investments, and intracity and intercity bus terminals and facilities. Eligible freight projects include:

- Preservation of abandoned rail corridors;
- Bridge clearance increases to accommodate double-stack freight trains;
- Capital costs of advanced truck stop electrification systems; and
- Freight transfer yards.

The Federal share of STP funding is generally 80 percent. When the funds are used for interstate projects to add high-occupancy vehicle or auxiliary lanes, but not other lanes, the Federal share may be 90 percent. Certain safety improvements listed in the Highway Safety Improvement Program (23 USC 120(c)) have a Federal share of 100 percent.

8.2 SPECIAL FUNDING PROGRAMS UNDER SAFETEA-LU

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

The CMAQ program (Title 23 USC Section 149) funds transportation projects and programs that improve air quality (by reducing transportation-related emissions) in nonattainment and maintenance areas for ozone, carbon monoxide (CO), and particulate matter (PM₁₀, PM_{2.5}). Both public and private entities are eligible to receive funds.

CMAQ funds have been commonly used for freight-related projects that improve air quality by reducing truck traffic. Examples of CMAQ-funded freight projects include construction of intermodal facilities, rail track rehabilitation, and new rail sidings in or benefiting nonattainment areas.

CMAQ funds may be used for projects that have clear environmental benefits. Funding priorities are a local decision and would require working through the MPO process. However, CMAQ funds are distributed by INDOT.

Rail-Highway Grade Crossings

Formerly a set-aside of the STP program, the Rail-Highway Grade Crossing program (Title 23 USC Section 130) provides funding for projects that reduce the number of fatalities and injuries at public highway-rail grade crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings. Legislation requires that states set aside at least 50 percent of the funding allocation for the installation of protective devices at rail-highway crossings. If all needs for installation of protective devices have been met, the funds available can be used for other at-grade crossing projects eligible under this program.

Eligible projects include:

- Grade separation or protection of at-grade crossings, such as through installation of active or passive warning devices;
- Reconstruction of existing railroad grade crossing structures, and
- Relocation of highways or rail lines to eliminate grade crossings.

This category of funds can be used in a corridor for new or modified rail grade crossings and relocations at state discretion and where a safety benefit is shown. Rail grade crossings that can show a safety benefit would clearly be eligible for this category of funds.

Federal Transit Administration Fixed Guideway Modernization Program

FTA's Fixed Guideway Modernization Program provides funding for capital improvements on "fixed guideway" systems, including heavy rail, commuter rail, HOV systems, and light rail. Transit and commuter rail providers are eligible to receive funds from this program for systems that have been in place for at least seven years. The funds are allocated to urbanized areas by a statutory formula. Although freight projects are not eligible to use this funding source, capital improvements on passenger rail lines shared with freight rail often provide joint benefits. This program is a potential source of funding for aspects of freight projects that provide improvements to commuter rail such as the grade separation of freight and passenger tracks.

Rail Line Relocation Grant Program

The Rail Line Relocation Grant Program (Section 9002) provides grants to states for local rail line relocation and improvement projects that improve highway vehicle flow, enhance quality of life, or expand economic development opportunities. SAFETEA-LU authorized \$350 million per year for fiscal years 2006 through 2009, subject to appropriations.

8.3 DISCRETIONARY GRANT PROGRAMS UNDER SAFETEA-LU

Transportation, Community, and System Preservation Program (TCSP)

The Transportation, Community, and System Preservation (TCSP) Program is a comprehensive initiative of research and grants. The primary purpose of the program is to investigate the relationships between transportation, community, and system preservation plans and practices and develop initiatives to improve such relationships. Grants are provided to states and local entities and potential private partners to carry out eligible projects to integrate transportation, community, and system preservation plans and practices that:

- Improve the efficiency of the transportation system of the United States;
- Reduce environmental impacts of transportation;
- Reduce the need for costly future public infrastructure investments;
- Ensure efficient access to jobs, services, and centers of trade; and
- Examine community development patterns and identify strategies to encourage private sector development patterns and investments that support these goals.

Section 1117 of SAFETEA-LU authorized the TCSP Program through FY 2009. A total of \$270 million is authorized for this program in FY 2005-2009. The TCSP Program is an FHWA Program being jointly developed with the Federal Transit Administration, Federal Rail Administration, Office of the Secretary, and Research and Innovative Technology Administration within the U.S. DOT, as well as the U.S. Environmental Protection Agency. These projects are typically earmarked by the Appropriations Committees.

These are typically small grants but may provide opportunities for INDOT to demonstrate integration of intermodal freight transportation with community goals.

8.4 OTHER DISCRETIONARY GRANT PROGRAMS

The following discretionary programs in SAFETEA-LU have been fully earmarked and no additional funds currently are available. However, similar programs may be available to fund freight in the upcoming transportation authorization bill.

- **High-Priority Projects (Title 23 USC 117)** - This program provided designated funding over a five-year period for 5,091 projects identified in SAFETEA-LU, some of which enhance freight mobility.

- **Transportation Improvement Projects (Section 1934)** – This program provided funding for 466 earmarked projects, some of which enhance freight mobility.
- **Projects of National and Regional Significance (Section 1301)** – This program provided funding for 25 high-cost projects that are expected to have national and regional benefits, including: 1) improving economic productivity by facilitating international trade; 2) relieving congestion; and 3) improving transportation safety by facilitating passenger and freight movement. Eligible projects include any surface transportation project eligible for Federal assistance under title 23 USC, including freight railroad projects.
- **National Corridor Infrastructure Improvement Program (Section 1302)** – This program provided funding for planning, development, and construction of 33 highway projects in corridors of national significance to promote economic growth and international or interregional trade.
- **Freight Intermodal Distribution Grant Program (Section 1306)** – This program provided funding for six intermodal freight transportation initiatives to relieve congestion and improve safety, and to address infrastructure and freight distribution needs at inland ports and intermodal freight facilities. SAFETEA-LU authorized \$6 million per year through FY 2009. Grants were \$5 million or less and tended to be port-oriented, although inland intermodal facilities were eligible.

8.5 INNOVATIVE FINANCING TOOLS UNDER SAFETEA-LU

Federal financing tools potentially applicable to freight projects include loan, credit enhancement, and tax-expenditure programs as authorized in SAFETEA-LU. Some of these tools are options for consideration at the state level. Others require that an entity exists that could be the recipient of loans or issue bonds.

Transportation Infrastructure Finance and Innovation Act (TIFIA)

The TIFIA credit program (Section 1601) was originally enacted in the Transportation Equity Act for the 21st Century (TEA-21), and was modified by SAFETEA-LU. This program provides credit assistance (up to one-third of the project cost) for major transportation investments of national or regional significance. Credit assistance is provided through secured loans, loan guarantees, or lines of credit. SAFETEA-LU expanded TIFIA eligibility to private rail projects. Eligibility for freight facilities includes:

- Public or private freight rail facilities providing benefits to highway users;
- Intermodal freight transfer facilities;

- Access to freight facilities and service improvements, including capital investments for ITS; and
- Port terminals, only when related to surface transportation infrastructure modifications to facilitate intermodal interchange, transfer, and access into and out of the port.

SAFETEA-LU authorizes \$122 million per year to pay the subsidy costs of supporting Federal credit under TIFIA. Lending authority is capped at \$2.2 billion annually. Repayment of TIFIA loans is required to come from tolls, user fees, or other dedicated revenue sources.

The program requires the designation of a user fee for repayment of the loan over time. In the case of the Alameda Corridor, container fees are the source for repayment. The railroads do not favor this type of fee. For the Reno rail project, hotel tax receipts were designated as a source of repayment.

State Infrastructure Banks (SIB)

The new SIB program (Section 1602) under SAFETEA-LU allows all states to establish infrastructure revolving funds eligible to be capitalized with Federal transportation dollars authorized through fiscal year 2009. In addition, the implementation of multistate SIBs is permitted in the new legislation, which may encourage states to implement and fund projects (including regional freight improvements) that cross jurisdictional boundaries. States also are allowed to create a rail account within the SIB using funds available for capital projects under Subtitle V (Rail Programs) of Title 49 USC. Through the SIB, states can issue loans and other credit tools to public and private sponsors of transportation infrastructure projects.

This is a state option. For example, Pennsylvania has set up a rail account within their SIB to provide revolving grants and loans to local projects. Indiana has a SIB in place and as of March 2003 had entered into two SIB loan agreements.⁵⁵

Rail Rehabilitation and Improvement Financing (RRIF)

The RRIF program (Section 9003) provides loans and credit assistance to both public and private sponsors of rail and intermodal projects. Eligible projects include acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities. SAFETEA-LU authorizes \$35 million for this credit program, of which \$7 million is directed to shortline and regional railroads. In addition, SAFETEA-LU eliminated two major issues, thus increasing the attractiveness of RRIF loans to the railroads. First, it removed the requirement that collateral be provided. Second, it removed the “lender of last

⁵⁵http://www.fhwa.dot.gov/innovativefinance/ifq92.htm#sib_highlights.

resort” provision, which required that applicants provide evidence that private lending was denied for the project by two lenders.

Private Activity Bonds (PAB)

Title XI Section 1142 of SAFETEA-LU amends Section 142(a) of the IRS Code to allow the issuance of tax-exempt private activity bonds for highway and freight transfer facilities. Therefore, state and local governments are allowed to issue tax-exempt bonds to finance the activities of “private persons,” i.e., the private sector, to construct freight transfer facilities. SAFETEA-LU includes a cap of \$15 billion on private activity bonds.

This program allows private entities such as railroads or developers to participate with state and local jurisdictions in issuing tax-exempt debt for intermodal transfer facilities. Projects involving rail intermodal facilities are actively being considered in different parts of the country.

Grant Anticipation Revenue Vehicle (GARVEE) Bonds

A GARVEE bond is a financing instrument that allows states to issue debt backed by future Federal-aid highway revenues. Eligibility for freight projects is constrained by the underlying Federal-aid highway programs that will be used to repay debt service.

8.6 OTHER NON-DOT PROGRAMS

U.S. Department of Commerce – Economic Development Administration (EDA) Funds

EDA provides grants for projects in economically distressed industrial areas that promote job creation and/or retention. Eligible projects must be located within an EDA-designated redevelopment area or economic development center. Eligible freight-related projects include: industrial access roads, port development and expansion, and railroad sidings. Grantees must provide evidence of economic distress that the project is intended to alleviate. Grant assistance is available for up to 50 percent of the project, although the EDA could provide up to 80 percent for projects in severely depressed areas. EDA’s fiscal year 2004 investments totaled approximately \$278 million, with grants ranging from \$12,000 to \$5.6 million.

Public-Private Partnerships

Historically, the public and private sectors have played different roles in enhancing freight transportation. For example, in the case of trucking, the public sector has built, owned, and operated transportation infrastructure – predominantly highways – and the private sector has used that infrastructure to conduct freight operations. With the rail mode, however, the private sector both owns the infrastructure and operates it, and the public sector promulgates and enforces

safety regulations. Public-private partnerships can take advantage of the public and private sector's shared needs for and benefits from an efficient freight system. Such partnerships can increase the potential for leveraging private sector efficiencies and expertise in the construction and operation of freight infrastructure.

8.7 FEDERAL FREIGHT FUNDING ROLE

When developing funding strategies, it is important to recognize the potential for significant changes in current transportation funding mechanisms on the horizon. Transportation stakeholders at the national level have recognized that the Federal approach to transportation planning and funding no longer is functioning effectively. The *Transportation for Tomorrow* report of the National Surface Transportation Policy and Revenue Study Commission released in January 2008⁵⁶ states “the surface transportation system of the United States is at a crossroads” and “a significant increase in public funding is needed to keep America competitive.”

The report recommends streamlining the current 108 Federal transportation programs into 10 programs, with 1 dedicated to freight. The report strongly links goods movement to U.S. economic competitiveness:

It is not an overstatement to say that the Nation's potential for the creation of wealth will depend in great part on the success of its freight efficiency. Without changes, countries such as China and India, with more dynamic policies for transportation and economic growth, will challenge the United States in economic power and world influence.

A dedicated freight program would represent a major opportunity for increased planning and funding resources dedicated to goods movement. A second program of the 10 recommended in the plan targets addressing metropolitan congestion. A program that addresses regional congestion could provide significant benefits for truck traffic that shares the roadways with personal vehicles.

The *Transportation for Tomorrow* report recommends several dedicated sources of funds for the Federal freight program, including increased gas tax revenues, investment tax credits for freight capacity expansion, a portion of Customs duties, a Federal freight fee, highway tolling, and public private partnerships.

Regarding a freight fee, the report states, “The payers of such a fee must realize the benefit of improved freight flows resulting from projects funded by the freight program. Such a fee should be designed to ensure that commerce is not burdened by local and state proliferation of such fees; no mode of transportation or port of entry is disadvantaged; and the ultimate consumer bears the cost.”

⁵⁶www.transportationfortomorrow.org.

While recommending a series of increases in the Federal gas tax in the near term, the report points toward an eventual transition to tolls and vehicle mileage taxes. This was a major point of disagreement among Commission members; a minority report written by the U.S. Secretary of Transportation recommended that tolling, congestion pricing, and public-private partnerships be implemented in the near term. It was argued that pricing measures are an efficient method of managing the use of scarce transportation resources and can provide a fair method of funding improvements.

Financing options for transportation were explored by the second policy commission authorized by SAFETEA-LU, the National Surface Transportation Infrastructure Financing Commission, which published *Paying our Way – A New Framework for Transportation Finance*⁵⁷ in February 2009. The study states the transportation system is underpriced, resulting in excess demand for transportation. The report concludes the funding gap for highways and transit at the Federal level totals “nearly \$400 billion in 2010-2015 and grows dramatically to about \$2.3 trillion through 2035.” To meet these needs in the short term, the Commission recommends increasing the Federal gasoline and diesel fuel taxes by \$.10 and \$.15, respectively. The report states that \$.02 of the diesel tax increase should be dedicated specifically to freight investment.

The report evaluates the viability of various forms of fees and taxes, as shown in Table 8.2. Several freight-based fees are considered, with four Federal options rated as having strong potential: a heavy truck vehicle use tax, truck/trailer sales tax, container fee and truck tire tax. At the state level, the study finds the most promising financing strategy to be facility level tolling and pricing, which would derive revenue from both freight and passenger users. According to the study, a consensus has emerged supporting a Federal funding system based on direct user payment, in the form of paying per mile driven.

⁵⁷http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Advance%20Copy_Feb09.pdf

Table 8.2 Revenue Option Evaluation Summary

| Strong | Moderate | Weak | Not Applicable/ Seriously Flawed |
|--|---|--|--|
| Federal Options | | | |
| <ul style="list-style-type: none"> • Vehicle miles traveled fee • Automobile tire tax • Motor fuel tax • Carbon tax/cap and trade • Customs duties • Heavy vehicle use tax • Truck/trailer sales tax • Vehicle registration fee • Container fee • Tariff on imported oil • Sales tax on motor fuels • Truck tire tax | <ul style="list-style-type: none"> • Freight waybill tax • Vehicle sales tax • Harbor maintenance tax • General fund transfer | <ul style="list-style-type: none"> • Freight ton-mile tax • Driver’s license surcharge • Bicycle tire tax • Dedicated income tax • Auto-related sales tax • Freight-ton based tax • General sales tax | <ul style="list-style-type: none"> • Vehicle inspection and traffic citation surcharge • Vehicle personal property tax • Windfall profits tax • Petroleum franchise tax • Minerals severance tax • Federal tax on local transit fares • Federal tax on local parking fees |
| State and Local Options Benefiting from Federal Action | | | |
| <ul style="list-style-type: none"> • Facility level tolling and pricing | <ul style="list-style-type: none"> • Proceeds of asset sales, leases, and concessions | <ul style="list-style-type: none"> • Cordon area pricing • Passenger facility charges | <ul style="list-style-type: none"> • Development and impact fees • Tourism related taxes • Tobacco, alcohol and gambling taxes. |

Source: *Paying Our Way-A New Framework for Transportation Finance*, National Surface Transportation Infrastructure Financing Commission, February 2009.

8.8 STATE FUNDING PROGRAMS AND POLICIES

Some of the more transportation-specific state funding programs that can be applied to freight-related projects are described below.

Industrial Rail Service Fund

The Industrial Rail Service Fund (IRSF) was initiated in 1982 and is administered by INDOT's Rail Office. It provides grants or low-interest loans to Class II and III railroads and port authorities to purchase or rehabilitate property to be used for rail transportation and to rehabilitate railroad infrastructure. IRSF funding has generally focused on rehabilitation projects to upgrade the condition of Indiana's Class III railroads.

The IRSF was funded with .029 percent of the state sales tax as of FY 2009, as determined annually by the General Assembly. The maximum grant award amount is \$350,000. However, grant awards to port authorities may not exceed 20 percent of gross sales and tax use receipts deposited in the previous fiscal year, and in FY 2008, individual grant awards to port authorities are limited to \$184,000 out of a total of \$1.3 million available in the IRSF. Railroads and port authorities are limited to grants of no more than 75 percent of total project cost. To support economic growth initiatives, \$200,000 per year is available to the Indiana Economic Development Corporation for rail infrastructure projects to help attract job-creating business development.

Railroad Grade Crossing Fund

The Railroad Grade Crossing Fund (RRGCF) administered by INDOT's Office of Roadway Safety provides resources for railroad crossing safety improvements to local jurisdictions, counties, and Class II and III railroads. The RRGCF is divided into two programs: the Crossing Closure Program and the Other Safety Improvements Program. The Crossing Closure Program is designed to compensate communities that close a crossing, which is deemed by the Federal Railroad Administration (FRA) to be the most effective safety treatment. A total of \$300,000 was available in the Crossing Closure Program for FY 2008 as appropriated by the General Assembly. Awards ranging from \$15,000 to \$55,000 are made based on the predicted accident rate at a crossing. The Other Highway Safety Improvements Program was funded at \$700,000 for FY 2008 with a maximum grant of \$50,000. Grants are awarded based on the community and county population, volume of rail traffic, and project type.

Build Indiana Fund

The Build Indiana Fund⁵⁸ was created via the 1989 Lottery Act from gambling revenue. According to the law establishing the program (IC-4-30-17), funds are permitted to go to government units for state and local capital projects. Each year \$250 million is distributed into the fund. As shown in Table X.2, from 1989 through June 2007, the Build Indiana Fund received \$4.38 billion in lottery and gaming revenues and transfers. The vast majority of funds are distributed to the Vehicle Excise Tax Replacement Account, a mechanism developed to compensate for a reduction in state automobile excise taxes. Any surplus remaining in the Build Indiana Fund after distributions to the Motor Vehicle Excise Tax Replacement Account may be distributed for State and local capital projects and other appropriations specified by the General Assembly. As shown in Table 8.3, \$6.1 million has been distributed to INDOT, \$60 million to the Local Road and Street Account, and \$408 million to Build Indiana Fund Local Projects between 1989 and 2007.

⁵⁸ http://www.state.in.us/sba/files/LGS_Distribution_Report_2007.pdf

Table 8.3 Build Indiana Fund Disbursements
1989 to 2007

| State Totals by Expenditure/Distribution Category | Fiscal Year 2007 | Cumulative Total Fiscal Years 1989-2007 |
|--|--------------------|---|
| Excise Tax Reduction | 236,212,440 | 2,524,785,644 |
| Supplemental Tuition Support | | 293,207,699 |
| City and Town Police and Fire Pensions | 30,000,000 | 336,332,833 |
| Job Creation and Economic Development | | 30,000,000 |
| Build Indiana Fund Local Projects | 27,034 | 407,973,367 |
| Local Road and Street Account Distribution | | 60,000,000 |
| Indiana Technology Fund | 4,750,000 | 182,924,295 |
| Teachers' Retirement Fund Pre-1996 Account | 30,000,000 | 462,600,963 |
| Teachers' Retirement Fund 1996 Account | | 60,000,000 |
| 21 st Century Research and Technology Fund | | 50,699,998 |
| Digital Television Conversion for Indiana PBS Station | | 17,879,380 |
| Little Calumet River Basin Commission | | 3,000,000 |
| Indiana University Proton Therapy | | 10,000,000 |
| Purdue University Nonotechnology | | 5,000,000 |
| Higher Education Technology | | 29,000,000 |
| Department of Natural Resources State Projects | | 1,900,000 |
| Indiana Department of Transportation Projects | | 6,156,833 |
| Stream Pollution Control Grants | | 22,800,000 |
| Board of Finance Transfer to the General Fund | | 247,304,622 |
| Property Tax Replacement Fund Transfer | | 375,000,000 |
| 1992-1993 Biennium Appropriations to the Highway Construction Account | | 72,500,000 |
| Grand Total – Build Indiana Fund Distributions | 300,989,474 | 5,199,065,634 |

Source: Distribution of Build Indiana Fund and Lottery and Gaming Revenues for Fiscal Year ending June 30, 2007, Indiana State Budget Agency

State Sponsored Incentives

Also highlighted in FHWA's *Financing Freight Improvements* is the fact that "other state funding sources, financing tools, and institutional arrangements can raise dollars to fund freight improvements and/or match grant funds." This can include various sources: "user fees and/or tolls, dedicated taxes, special taxing and assessment districts, and equity and in-kind contributions. Financing tools such as tax-supported revenue and tax-exempt facility bonds, and institutional

arrangements, such as joint development, revenue-sharing arrangements/leases, and cost-sharing/voluntary agreements, also provide alternative approaches to funding freight projects.”⁵⁹ Indiana offers many of these alternative approaches. In addition to infrastructure and safety funding programs discussed above, the State has a history of aggressively marketing itself toward attracting new businesses, many of which are heavily freight intensive. Economic development agencies that work to attract and retain businesses are discussed in Chapter 5.

The Indiana Economic Development Corporation offers an array of state-sponsored incentives to entice business creation, expansion, and relocation. Given Indiana’s centralized, “crossroads of America” location, industry sectors that rely heavily on freight transportation are among those taking advantage of incentives. Industry initiatives are in place for: Advanced Manufacturing, Agriculture, Life Sciences, Logistics, and Motorsports, among others.⁶⁰ In effect, a direct correlation can be drawn between state economic development initiatives and freight transportation issues. Funding mechanisms that are available in addition to traditional state programs include:⁶¹

- Industrial Development Grant Fund (IDGF);
- Small Business Innovation Initiative (SBIR/STTR);
- 21st Century Research and Technology Fund;
- Tax-exempt Bonds;
- Loan Guaranty Program;
- Capital Access Program (CAP);
- Certified Technology Park Program;
- Regional Economic Development Partnership Programs;
- IEDC Regulatory Ombudsman;
- “Shovel Ready” site certification program;
- Economic Development for a Growing Economy Tax Credit (EDGE);
- Hoosier Business Investment Tax Credit (HBITC);
- Industrial Recovery Tax Credit;
- Venture Capital Investment Tax Credit;
- Headquarters Relocation Tax Credit; and

⁵⁹FHWA *Financing Freight Improvements*.

⁶⁰ Indiana Economic Development Corporation, 2008

⁶¹ Indiana Economic Development Corporation, Grants and Incentives. <http://www.in.gov/iedc/grants.htm>

- Workforce Training and Development Funding.

As shown in Table 8.4, a number of states have developed tools to finance freight improvements such as grant and loan programs for which freight projects are eligible. State funds may be financed by general revenue or specific taxes. Types of programs include those that offer long-term loans at below-market costs, grants for projects that promise significant job creation or retention, and matching funds for projects of statewide significance.

Table 8.4 Illustrative State Grant and Loan Programs

| Program | State | Highway | Rail | Airport | Port | Intermodal |
|---|--------------|---------|------|---------|------|------------|
| California Infrastructure and Economic Development Bank (I-Bank) | California | Yes | No | No | Yes | Yes |
| California Maritime Infrastructure Bank (CMIB) | California | No | No | Yes | Yes | No |
| Florida Seaport Transportation and Economic Development Funding (FSTED) | Florida | Yes | Yes | No | Yes | Yes |
| Florida Strategic Intermodal System (SIS) | Florida | Yes | Yes | Yes | Yes | Yes |
| Illinois Rail Freight Program (IRFP) | Illinois | No | Yes | No | No | No |
| Indiana Rail Service Fund/Grade Crossing Improvement Fund | Indiana | Yes | Yes | No | No | No |
| Maine Industrial Rail Access Program (IRAP) | Maine | No | Yes | No | No | No |
| Michigan Rail Loan Assistance Program (MiRLAP) | Michigan | No | Yes | No | No | Yes |
| Michigan Freight Economic Development Program | Michigan | No | Yes | No | No | No |
| Michigan Local Grade Crossing Program | Michigan | Yes | Yes | No | No | No |
| Michigan Grade Separation Loan Program | Michigan | Yes | Yes | No | No | No |
| Minnesota Port Development Assistance Program | Minnesota | No | No | No | Yes | No |
| Minnesota Rail Service Improvement Program | Minnesota | No | Yes | No | No | Yes |
| Mississippi Multimodal Transportation Improvement Program | Mississippi | No | Yes | Yes | Yes | No |
| New York State DOT Industrial Access Program (IAP) | New York | Yes | Yes | No | No | No |
| Ohio Rail Development Commission (ORDC) | Ohio | No | Yes | No | No | No |
| Oregon Port Revolving Fund (OPRF) | Oregon | No | No | No | Yes | No |
| Oregon Transportation Investment Act | Oregon | Yes | No | No | No | No |
| Pennsylvania Rail Freight Assistance Program (RFAP) | Pennsylvania | No | Yes | No | No | No |
| Pennsylvania Airport Assistance Program | Pennsylvania | No | No | Yes | No | No |
| Tennessee Aeronautics Transportation Equity Fund (TEF) | Tennessee | No | Yes | Yes | Yes | No |
| Texas Rail Relocation and Improvement Fund | Texas | No | Yes | No | No | No |
| Virginia Rail Enhancement Funds (VREF) | Virginia | No | Yes | No | No | No |
| Virginia Rail Industrial Access Program (RIAP) | Virginia | Yes | Yes | No | No | No |
| Washington Freight Mobility Strategic Investment Board (FMSIB) | Washington | Yes | Yes | No | Yes | No |
| Wisconsin Harbor Assistance Program | Wisconsin | No | No | No | Yes | No |
| Wisconsin Rail Freight Programs | Wisconsin | No | Yes | No | No | Yes |

Source: *Financing Freight Improvements*, FHWA, 2007.

8.9 REGIONAL INCENTIVES

Most regions in Indiana have substantial amounts of developable land with which to attract potential businesses. In addition, many have efficient transportation connections, which is a defining criterion for freight-reliant businesses. In this sense, many local economic development incentive programs are directly applicable to projects involving a freight transportation element.

Ten regional economic development organizations are dispersed throughout the State, along with county-level development authorities. Local incentives tend to be similar, all offering real and personal property tax abatements, along with competitive tax rates, and packages of state-sponsored incentives listed above.

Terre Haute, for example, provides an array of potential incentives for business expansion and attraction. Packages are assembled by the regional Economic Development Corporation and can include the following:

- Property Tax Abatement;
- Tax Increment Financing (TIF);
- Tax Exempt Bonds; and
- Indiana Economic Development Corporation Certified Technology Park Certification.

Foreign-Trade Zones

Foreign-Trade Zones (FTZz) are granted to applicant agencies by the FTZ Board, comprised of the U.S. Secretaries of Commerce and the Treasury. There are six general-purpose FTZs in Indiana. Three are granted to the Indiana Ports Commission, one to the Indianapolis Airport Authority, one to the St. Joseph County Airport Authority, and one to the City of Fort Wayne⁶². In addition, there are 21 special-purpose Subzones in the state, which serve individual companies that cannot relocate to the general purpose sites. The largest concentration of Subzones is affiliated with the Indianapolis International Airport FTZ, which has 15 affiliated Subzones. Ford, Chrysler, Caterpillar, Deere & Company, Nissan, and Pfizer are among the corporations taking advantage of FTZ Subzones in Indiana. FTZs can serve as an additional incentive for companies engaged in international trade.

⁶²United States Department of Commerce, International Trade Administration.
<http://www.trade.gov/ia/index.asp>

9.0 Project Evaluation

The economic benefits evaluation of freight-related investments (either at the project or program level) links travel model and other typical transportation evaluation results for freight investment projects to an economic impact model that translates transportation impacts, such as user benefits, reliability, and accessibility improvements into industry cost and competitiveness impacts. These direct economic impacts lead to gains in employment, income, and gross state product (GSP). This approach combines current and projected traffic volume-based economic impacts with transportation/economic impacts based on other factors (e.g., market accessibility improvements).

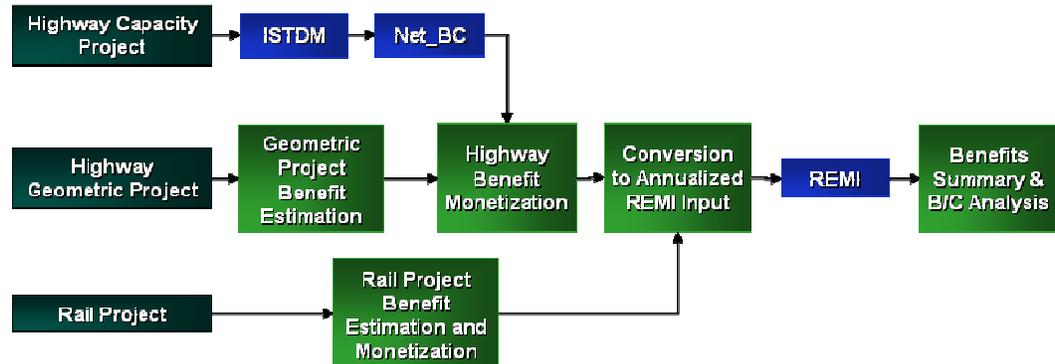
Full economic effects, along with preliminary cost estimates of the infrastructure improvements, provide the ability to prioritize potential projects into a more narrowly focused set of investments that are targeted at supporting freight transportation and the Indiana economy.

However, the most successful freight programs are those integrated into existing processes, rather than those created from entirely new processes. The analysis methodology itself utilizes various models of MCIBAS (the statewide travel model, NET_BC, and REMI), already part of INDOT's suite of tools. Further, the results of the process below can be integrated as an additional "freight" factor in the scoring and prioritization process used by INDOT (see Chapter 6).

9.1 METHODOLOGY OVERVIEW

The process addresses three distinct types of freight related infrastructure improvements: highway capacity improvements; highway geometric improvements; and rail improvements. The procedures for evaluating each of the three types of projects are depicted in Figure 9.1. While this methodology provides a tool for evaluating and prioritizing freight projects in order to compare the economic benefits and costs of competing projects, availability of data and analysis tools for the three different modes requires slightly different evaluation processes. Therefore, though the methodology ultimately provides the same types of outputs for each of the three infrastructure improvements, the results should be compared to other projects of the same type and mode.

Figure 9.1 Freight Project Evaluation Methodology



The economic impacts generated by highway capacity improvement projects are based on the increase in user benefits that would result from building these facilities. Improvements to highway infrastructure have a direct impact on transportation system performance. By adding capacity, travel times are reduced, resulting in lower congestion levels, reduced fuel consumption and enhanced safety.

User benefits in the form of time savings and safety benefits are calculated based on the travel demand model (ISTDM) and NET_BC post-processor. For geometric projects, whose benefits cannot be calculated using the ISTDM, benefits in terms of travel time, delay, and safety improvements, if available from previous studies, can be used. Where information from other studies on projected benefits from a geometric improvement is not available, data from national sources are used to estimate likely percent improvements.

User benefits are split into three categories based on mode: truck, business automobile, and non-business automobile trips. The value of the user benefits for each of these varies, largely due to trip purpose and differences in value of time:

- **Trucks and business auto** -- The user benefits for trucks and business automobiles represent a cost savings for businesses (due to lowering delay and fuel costs) which then translate into productivity improvements. Productivity gains (and increased competitiveness) add to increased business activity which in turn generates multiplier effects on employment, income and output which can also be quantified.
- **Non-business auto** -- User benefits for non-business automobile trips are also valued by using estimated value-of-time measures. However, private trip user benefits do not result in productivity impacts that generate changes in aggregate economic variables. As a result, these non-business user benefits are estimated but not included in the regional economic impact (REMI) analysis. Rather, these user benefits for non-business travel are accrued by private motorists and contribute to their respective welfare. Hence, they are added to the post-REMI regional economic benefits, prior to performing the benefit-cost analysis.

The business portions (trucks and business auto) of the monetized user benefits (from NET_BC) serve as inputs to the REMI model (a dynamic simulation of the Indiana economy) in order to calculate the macroeconomic benefits (e.g., gross state product) that might accrue as a result of the construction of the roadway improvement⁶³. The GSP benefits from REMI and non-business auto benefits are then combined and compared to the project costs--capital as well as operation and maintenance--to estimate the benefit-cost ratio of implementing the improvement.

Unlike the roadway improvement projects, rail improvement projects do not have readily-available modules similar to the ISTD and NET_BC to produce monetized user benefits. The approach to identifying the benefits resulting from rail improvement projects is therefore based on measuring production cost savings that would result from the proposed improvement. This approach requires considerable knowledge of how the rail line is used and a solid estimate of the time savings that would be associated with the rail improvement. These data should be available on a project-by-project basis to be provided by the project sponsor when it is submitted for funding consideration.

In order to assemble the overall rail user benefits that will be used as a cost savings for the REMI model, information on the following factors is required:

- Annual throughput affected by proposed investment
- Value per ton
- Cost of capital
- Travel time savings from proposed investment

Appendix A provides more detail on performing the evaluation methodology.

9.2 CASE STUDY EVALUATION

Three case studies were selected to test and demonstrate the use of the evaluation methodology. A breadth of projects was evaluated: one highway capacity project, one highway geometric project, and one rail project. Though the methodology ultimately provides the same types of outputs for each of the three infrastructure improvements, the results should be compared to other projects of the same type and mode. The results of the rail project evaluation are shown below.

Freight Rail Improvement

Freight rail improvement projects are not normally modeled by public sector transportation agencies, so extensive data and parameters on possible benefits

⁶³ Business attraction benefits are not included.

for proposed benefits are often not publicly available. As part of the *Binghamton Regional Freight Study*, Cambridge Systematics performed benefit-cost analyses on several potential freight rail projects in the area. Projects included:

- Reduce grade leading to tunnel
- Restore bridge and improve lines to handle 286k pound cars
- Reduce conflicts between NS and CP trains
- Through-tracks to separate through trains
- New intermodal yard/inland port

The parameters for these evaluations utilized typical industry values and local data. Using these approximate values, a typical sample project was developed for Indiana along a rail line with an estimated non-bulk annual throughput of 300,000 tons that would save each train 60 minutes of travel time (Table 9.1).

Converting these values to industry cost savings and inputting them into REMI, the evaluation methodology outputs \$49 million in discounted benefits, with a benefit-cost ratio of 4.9.

Table 9.1 Freight Rail Improvement – Case Project Specifications

| Specification | Value |
|------------------------------|-------------------------------|
| Estimated Opening Date | 2018 |
| Construction Cost | \$10 million ^a |
| Annual Throughput (non-bulk) | 300,000 tons |
| Travel Time Savings | 60 minutes/train ^a |

Source: a. Estimated from *Binghamton Regional Freight Study*, Cambridge Systematics, 2008.

10.0 Implementation and Action Plan

10.1 POLICY RECOMMENDATIONS

The full list of recommended policy actions, organized by policy area, is shown in Table 10.1. Some policy gaps, needs, and recommendations presented in Chapter 6 fall into several different policy areas, but are presented only once in Table 10.1 to avoid redundancy. The table provides other organizations that are likely to be involved in each strategy outside of INDOT. Strategies are also classified according to level of priority (low, medium, or high) and suggested phasing (short-, mid-, or long-term).

Due to the nature of policy strategies, a shorter time frame is often more appropriate. Though priorities may differ, most strategies can and should be pursued in parallel and as soon as staff resources allow. Many policy strategies can have impacts far outweighing implementation costs relative to large infrastructure projects; additionally, some policy strategies may be necessary for the successful implementation and completion of freight infrastructure projects.

The freight link to planning and programming is the broadest policy strategy listed, and is also among the most important. It ensures that freight is considered at all levels of INDOT planning and programming. Without this link, it is difficult to achieve most other policy recommendations. Some elements related to implementation from a planning and programming perspective, such as funding sources, funding availability, and Federal regulations and guidance related to freight are likely to change with pending authorization of a new transportation bill likely to occur later in 2009.

Communication is also a vital component for the future of freight transportation in Indiana; it should be continuous, multi-faceted, and targeted to numerous audiences. Communication helps to present information on projects and policies to stakeholders; obtain feedback and useful information for planning and better refining existing proposals; and achieve buy-in and support. These audiences can range from other state and local governments and agencies; Federal, state, and local decision-makers; and private industry. Ongoing and open communication will help project and policy implementation, particularly the acquisition of funding. It improves coordination, consistency, and creates a stronger unified voice for freight funding and improvements. Communication also includes data and system understanding policies, such as real-time communication of freight system conditions.

Examining the full spectrum of funding sources currently accessible to INDOT and possible funding sources INDOT has not yet tapped into is among the

highest policy priorities. The process of navigating regulations related to different funding pools can sometimes require a lengthy learning curve, and some funding mechanisms could even require legislative or organizational changes.

Table 10.1 Policy Implementation Plan Summary

| Policy Area | Recommendation | Priority | Phasing ^a | Other Involved Organizations |
|-------------------------------|---|----------|----------------------|---|
| Freight Technical Lead | Dedicated staff/resources for freight planning | High | Short | - |
| Freight System Understanding | Centralized, comprehensive information for carriers | Med | Mid | Carriers; State Police; Other agencies with relevant data |
| Link to Planning/ Programming | Boost understanding and consideration of freight by MPOs | High | Ongoing | MPOs |
| | Encourage formation of, and then support through sharing of best practices, MPO Council Freight Committee | High | Short | MPOs |
| | Develop mechanisms for ongoing communications with private shippers and carriers | High | Short | Shippers/ Carriers |
| | Work with INDOT long-range planning office to improve processes for monitoring of industry/major land use developments affecting freight | Med | Mid | Local governments |
| | Implement methods for calculating public benefits of freight investment; communicate to each audience | High | Short | Various |
| Data | Work with the Operations Division to ensure that system analysis processes regularly identify freight impacts of system and operations deficiencies | Med | Mid | - |
| | Regularly update commodity flow data | Med | Ongoing | Indiana University; Private data companies |
| | Continuously evaluate, support MPO and regional freight data needs | High | Ongoing | MPOs |
| | Solicitation on regional conditions related to freight by INDOT district offices | Med | Mid | - |
| Stakeholder Outreach | Freight communications tools, such as listservs | Low | Short | - |

| Policy Area | Recommendation | Priority | Phasing ^a | Other Involved Organizations |
|-----------------------|--|----------|----------------------|---|
| | Enhance freight information and organization on INDOT website; develop web content on benefits of all freight modes | Low | Short | - |
| | Assist regional agencies/MPOs coordinating freight developments between jurisdictions | High | Short | MPOs, other regional/local governments |
| Training & Education | Promote participation in existing training programs, such as US DOT programs | Med | Short | USDOT; MPOs, other regional/local governments |
| | Develop and lead state-specific freight programs for MPOs | High | Mid | MPOs, other regional/local governments |
| | Monitor logistics workforce needs and educational supply; work with educational institutions and employers to ensure synergy | Med | Mid | Logistics industry; state universities |
| Advocacy | Share views on importance of freight as part of Federal/state legislative outreach | High | Short | Congress; State legislature |
| Safety | Monitor progress of freight-related SHSP initiatives | High | Short | State Court Administration; State Police |
| Funding | Communicate support of dedicated freight and metropolitan congestion relief programs recommended in National Surface Transportation Policy and Revenue Study Commission report | Med | Short | Various |
| | Pursue Federal funding programs used to support freight investments | High | Short | FHWA, other Fed. agencies |
| | Participate in a state legislative “Freight Day,” to highlight infrastructure investment opportunities and benefits; participate with other organizations such as the Indiana Trucking Association | Med | Short | State legislature; Indiana Trucking Association |
| | Evaluate incentive and funding programs for freight in other states and consider developing new or modifying existing freight programs in IN | High | Short | State legislature |
| | Continue to pursue public/private partnerships | High | Ongoing | Private industry |
| Multimodal/Intermodal | Pursue state legislation to expand INDOT’s oversight, management, and support of alternative modes | Med | Long | State legislature |
| | Reevaluate recently evaluated projects and corridors with a broader look at multimodal and intermodal opportunities | High | Short | Project sponsors |

| Policy Area | Recommendation | Priority | Phasing ^a | Other Involved Organizations |
|-------------|--|----------|----------------------|------------------------------|
| | Streamline legislative process for acquiring abandoned rail ROW by INDOT for utilities, other uses | Low | Short | State legislature |

^aShort-term – Within one year; Mid-term – one to two years; Long-term – More than two years.

10.2 RAIL-RELATED CAPITAL AND OPERATING RECOMMENDATIONS

The full list of recommended capital and operating projects, organized by mode, is shown in Table 10.2. Some projects, particularly those related to non-highway modes over which INDOT currently has limited jurisdiction, may ultimately become more of a “policy” project from INDOT’s perspective, involving support, coordination, outreach, and assistance with funding acquisition.

The I-65 highway corridor is facing increasing congestion throughout its entirety in Indiana through 2030. Capacity expansions along its entire length will be extremely costly; targeted capacity improvements combined with investment in multi-modal alternatives, understanding the specific industries, commodities, and origin-destination pairs accounting for much of the existing freight volume (see Chapter 7), may be a more cost-effective approach to easing congestion and improving freight mobility along Indiana’s north-south axis.

Similarly, Northwest Indiana is continuing to experience high levels of congestion along most of its highways; as a part of the Chicago region and the nation’s primary freight and logistics center, improvements for freight mobility are critical. The Borman Expressway, with one of the highest truck volumes in the nation, is already at capacity despite recent expansion; space is not available for any future expansion. Relevant policies and projects related to rail and marine alternatives should begin to be pursued. In the mid- to long-term, improvements along the Ohio River and improved road and rail accessibility to ports along the Ohio River may help to increase use of that underused transportation corridor. Grain, stone, and coal shipments can thereby bypass some of Indiana’s most congested rail and highway thoroughfares.

Table 10.2 Mode-Specific Implementation Plan Summary

| Mode | Recommendation | Priority | Phasing ^a | Other Involved Organizations |
|---------|--|----------|----------------------|---|
| Highway | I-65 – Northwest IN, capacity improvement and/or mode shift (see Rail Recommendations) | High | Mid | Class 1 Railroads; Short line/ regional railroads |

| Mode | Recommendation | Priority | Phasing ^a | Other Involved Organizations |
|------|--|----------|----------------------|---|
| | I-65 – Indianapolis to Louisville, capacity improvement and/or mode shift (see Rail Recommendations) | High | Mid | Class 1 Railroads; Short line/ regional railroads |
| | I-65 – remaining sections, capacity improvement and/or mode shift (see Rail Recommendations) | Med | Long | Class 1 Railroads; Short line/ regional railroads |
| | Borman demand reduction through mode shift (see Rail and Marine Recommendations) | High | Short | Illinois DOT; NIRPC; Port of Indiana; Class 1 Railroads; Short line/ regional railroads |
| Rail | Capacity improvements to Indiana’s primary Class 1 railroads | Med | Mid | Class 1 railroads |
| | 286,000 lb capacity on Indiana’s short lines/regional rail; Sufficient capacity and coverage of short lines/regional rail for low-cost, short-haul bulk goods; Continue or increase funding through IRSF or other source | High | Short | Short line/regional railroads State legislature |
| | Avon Yard highway access: U.S. 36 capacity improvements | Med | Mid | - |
| | Intermodal container facility in Indiana in conjunction with increased and more direct west coast service | High | Mid | Class 1 railroads; shippers; truckers; economic development agencies |
| | Increased rail service frequency to Evansville and Remington, particularly for manufacturing industry | Med | Short | Class 1 railroads; shippers; truckers; economic development agencies |
| | Direct west coast rail service | High | Short | Class 1 railroads; shippers; truckers; economic development agencies |

| Mode | Recommendation | Priority | Phasing^a | Other Involved Organizations |
|-------------|---|-----------------|----------------------------|---|
| | Develop rail-based “coal corridor” to shift intrastate coal shipments to rail | Med | Long | Coal industry; Class 1 railroads; Short line/regional railroads |
| | Diversion of freight traffic from Indianapolis Union Station | Low | Long | CIRTA; Amtrak; Class 1 railroads; Indy MPO |
| Marine | Work with private industry to consider roll-on/roll-off capability on Lake Michigan | Low | Long | Port of Indiana; Class 1 railroads; Short line/regional railroads; other private industry |
| | Pursue greater diversity of rail options for ports | Low | Ongoing | Class 1 railroads; Short line/regional railroads |

^aShort-term – Within five years; Mid-term – five to ten years; Long-term – More than ten years.